



Adapter Guide

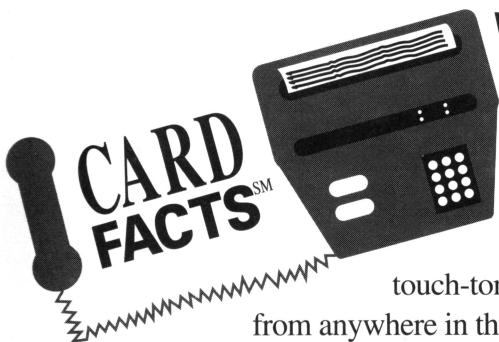
EtherLink® III Parallel Tasking™ 16-Bit ISA and 32-Bit EISA Adapters

3C509, 3C509-TP,
3C509-COMBO,
3C579, and
3C579-TP

3Com® CardFactsSM and CardBoardSM

Automated on-line systems that give you fast, easy adapter support.

Any time, anywhere.



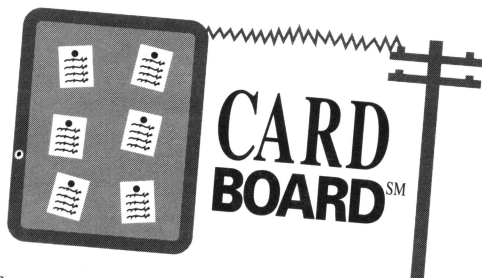
WHEN YOU NEED:

- ✓ Installation diagrams
- ✓ Configuration drawings
- ✓ Troubleshooting instructions
- ✓ Technical articles

Call CardFacts from your touch-tone phone. Dial 1-408-727-7021 from anywhere in the world, and follow the recorded instructions. The desired information will be faxed to you immediately. Request document 9999 for a list of available material.

WHEN YOU NEED:

- ✓ Software drivers
- ✓ Technical tips
- ✓ Product information
- ✓ Diagnostic programs
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Fax **408-727-7021**

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Pre-sales product information, including specifications and pricing. Product registration.

CardFactsSM adapter information via fax. Installation and configuration diagrams, plus technical articles.

Document 9999 provides a list of current material.

CardBoardSM bulletin board service. This menu-driven system includes patches, drivers, diagnostics, and technical articles to download.

Setting: Up to 14400 baud, 8 data bits, no parity, 1 stop bit.



Hello

ADAPTER PRICING INFORMATION, PRODUCT SPECIFICATIONS, AND REGISTRATION

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3Com adapter support is as close as your telephone, when you need it.

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June 1993

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International Adapter Support

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CardBoardSM bulletin board system. This menu-driven bulletin board system includes patches, drivers, diagnostics, and technical articles to download. Call the CardBoard nearest you:

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France: (33) (1) 69 86 69 54 Up to 14400 baud, 8 bits, no parity, 1 stop bit.

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EtherLink® III Parallel Tasking™ 16-Bit ISA and 32-Bit EISA Adapter Guide

Members of the 3Com EtherLink III family of adapters

**For 3Com User Group Information
1-800-NET-3Com
or your local 3Com office**

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Network adapters	Lifetime
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Other transmission products	One year
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FCC Class B Certification

3Com Corporation

Model Nos: 3C509, 3C509-TP, 3C579, 3C579-TP, 3C509-COMBO

FCC ID: DF67CC3C509

FCC ID: DF67CC3C509-TP

FCC ID: DF67CC3C579

FCC ID: DF67CC3C579-TP

FCC ID: DF67CC3C509-COMBO

Made in the U.S.A.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.



WARNING: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules, and the Canadian Department of Communications Equipment Standards entitled, "Digital Apparatus," ICES-003. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from the one which the receiver is connected to.
- Consult the dealer or an experienced radio/TV technician for help.

The user may find the following booklet prepared by the Federal Communications Commission helpful:

The Interference Handbook

This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402. Stock No. 004-000-00345-4.



NOTE: In order to maintain compliance with the limits of a Class B digital device, 3Com requires that you use quality interface cables when connecting to this device. Changes or modifications not expressly approved by 3Com could void the user's authority to operate this equipment. Refer to the manual for specifications on cabling types.

VDE Class B Compliance

Hiermit wird bescheinigt, dass die 3C509, 3C509-TP, 3C579, 3C579-TP, 3C509-COMBO in Übereinstimmung mit den Bestimmungen der Vfg 1046/1984 funk-entstört sind.

Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

We hereby certify that the 3C509, 3C509-TP, 3C579, 3C579-TP, and 3C509-COMBO comply with the RFI Suppression Requirements of Vfg 1046/1984. The German Postal Service was notified that the equipment is being marketed. The German Postal Service has the right to re-test the equipment and to verify that it complies.

3Com Corporation
5400 Bayfront Plaza
Santa Clara, California, U.S.A.
95052-8145

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Introduction

The 3Com® EtherLink® III Parallel Tasking™ adapters are a family of third-generation Ethernet adapters. These adapters include 16-bit Industry Standard Architecture (ISA) and 32-bit Extended Industry Standard Architecture (EISA) adapters for both coax and 10BASE-T connections. This manual contains installation, configuration, and diagnostic information about the following adapters:

- 16-bit ISA adapters
 - 3C509 coax
 - 3C509-TP 10BASE-T
 - 3C509-COMBO with both 10BASE-T and coax
- 32-bit EISA adapters
 - 3C579 EISA coax
 - 3C579-TP EISA 10BASE-T

The five adapters are functionally identical; they differ only in the layout of the components on each board, the bus connectors, and the backplates. The name EtherLink III adapter is used in this manual to refer to all five adapters unless otherwise specified.

EtherLink III adapters connect your IBM® personal computer or compatible to an Ethernet network wired with IEEE 802 standard 10BASE-2 or 10BASE-5 coaxial cable, or 10BASE-T twisted-pair cable.

EtherLink III ISA and EISA adapters can be installed in the following computers:

- IBM Personal Computer AT® (ISA only)
- IBM Personal System/2® computers containing ISA or EISA buses
- Any compatible UL®-listed personal computer that includes instructions for the installation of hardware and software options inside the main system unit.

Models 3C509, 3C509-TP, and 3C509-COMBO are 16-bit adapters that can be installed in either ISA or EISA computers. Models 3C579 and 3C579-TP are 32-bit EISA adapters that only fit in EISA computers.



NOTE: *The 3C509-TP and 3C579-TP adapters support the 10BASE-T specifications. The 3C509 and 3C579 adapters support coaxial cable specifications. The 3C509-COMBO adapter supports both specifications.*

Follow the Road Map

“Follow the Road Map” shows you which chapters to read for the successful installation and configuration of your EtherLink III adapter. It is especially useful if you:

- Are installing a single EtherLink III adapter in the computer in which it will operate
- Want to automatically configure the adapter

Your installation will consist of one of the following situations:

- An ISA adapter in an ISA computer
- An EISA adapter in EISA computer
- An ISA adapter in an EISA computer

If you are unsure of the type of adapter that you have, refer to Figure 1-1 and Table 1-1.

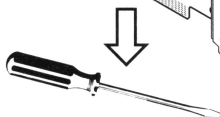
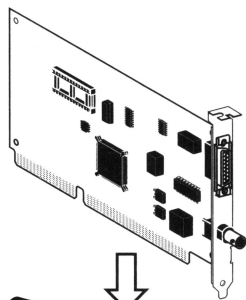
The chapters that you need to read for each of these installations are shown on the following pages.



NOTE: Remember to fill out the *Product Registration Card* at the back of this manual and return it to 3Com or call 1-800-NET-3Com for immediate registration.

An ISA Adapter in an ISA Computer

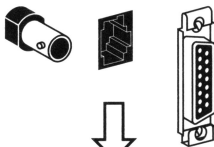
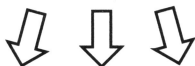
EtherLink III ISA adapters are the 3C509, 3C509-TP, and 3C509-COMBO.



Chapter 1. Installing the Adapter



Chapter 2. Configuring the ISA Adapter



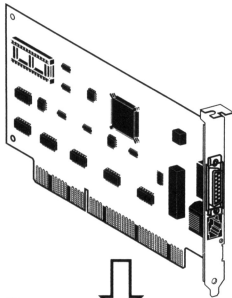
Chapter 5. Connecting to the Network



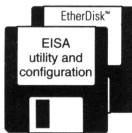
Chapter 6. Installing the Network Drivers

An EISA Adapter in an EISA Computer

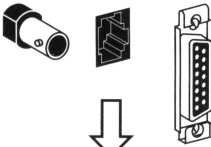
EtherLink III EISA adapters are the 3C579 and 3C579-TP.



Chapter 1. Installing the Adapter



Chapter 3. Configuring the EISA Adapter



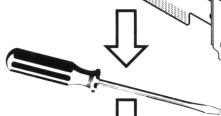
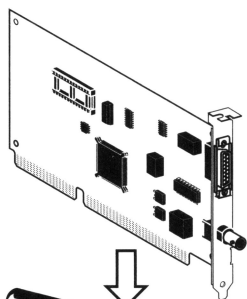
Chapter 5. Connecting to the Network



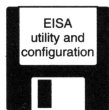
Chapter 6. Installing the Network Drivers

An ISA Adapter in an EISA Computer

EtherLink III ISA adapters are the 3C509, 3C509-TP, and 3C509-COMBO.



Chapter 1. Installing the Adapter



Chapter 4. Configuring the ISA Adapter for an EISA Computer



Chapter 5. Connecting to the Network



Chapter 6. Installing the Network Drivers

Chapter 1

Installing the Adapter

This chapter describes how to physically install EtherLink III adapters in your computer.

The contents of your EtherLink III adapter package are listed below. If any of these items are missing, contact your authorized network supplier immediately.

- EtherLink III adapter board (3C509, 3C509-TP, 3C509-COMBO, 3C579, or 3C579-TP)
- *EtherLink III Parallel Tasking 16-Bit ISA and 32-Bit EISA Adapter Guide*
- *EtherDisk*® diskette(s) for the EtherLink III family of adapters



NOTE: An ISA adapter (3C509, 3C509-TP, or 3C509-COMBO) operates in either a 16-bit ISA slot or a 32-bit EISA slot. A 32-bit EISA adapter (3C579 or 3C579-TP) operates **only** in a 32-bit EISA slot.

Installation consists of the following steps:

- Inspecting the adapter
- Installing the boot PROM (optional)
- Inserting the EtherLink III adapter in the computer slot

Inspecting the Adapter

Before installing the adapter, you should inspect it to see that it was not damaged during shipment.



CAUTION: *The adapter is packed in an antistatic bag to protect it during shipment. To avoid damaging any highly static-sensitive components on the adapter or the computer, be sure to reduce any static electricity on your person. One way to do this is to touch the metal chassis of your computer. You can maintain grounding by wearing a wrist strap attached to the chassis.*

Follow these steps to inspect the adapter:

- 1. Carefully lift the adapter out of the box and set it aside.**
- 2. Return all packing materials to the shipping container and store the container in a safe place.**

If you need to return the EtherLink III adapter to 3Com, you should pack it in the original (or equivalent) packing material.

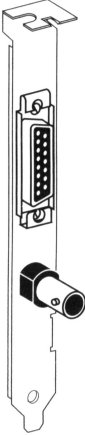

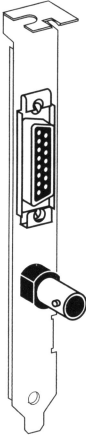
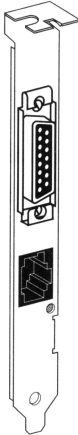
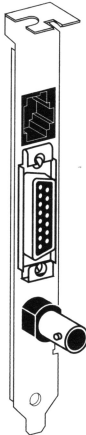
- 3. Remove the adapter from its antistatic bag.**
- 4. Check the adapter for any visible signs of damage.**

If you find a problem, immediately notify your network supplier and the carrier that delivered the adapter.

5. Determine the type of adapter that you have.

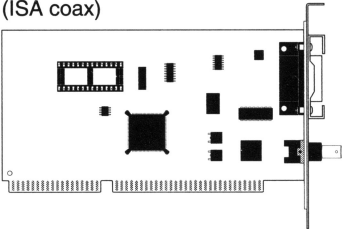
Use Table 1-1 and Figure 1-1 to identify the type of adapter (ISA or EISA) and the type of network connector you have. You will need this information later in the installation. Refer to the section “Changing Software Option Settings” in Chapter 2 for information on changing the Transceiver Type software option.

Table 1-1. Adapter Backplate Types

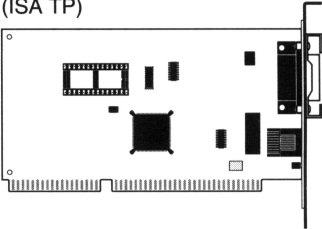
	3C509	3C509-TP	3C579	3C579-TP	3C509-COMBO
Type of board	ISA	ISA	EISA	EISA	ISA
Type of computer	ISA or EISA	ISA or EISA	EISA only	EISA only	ISA or EISA
Type of connector	AUI and coax	AUI and 10BT	AUI and coax	AUI and 10BT	AUI, coax, 10BT
Backplates and their connectors					

1-4 Installing the Adapter

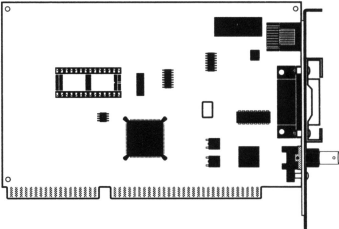
3C509
(ISA coax)



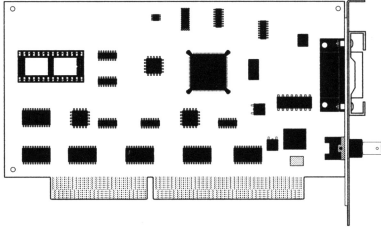
3C09-TP
(ISA TP)



3C509-COMBO
(ISA COMBO)



3C579
(EISA coax)



3C579-TP
(EISA TP)

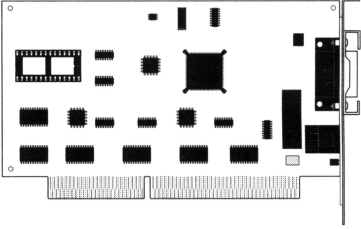


Figure 1-1. Adapter Types

Installing the Boot PROM

The boot PROM is optional and can be purchased separately. If you are installing it onto the adapter, follow the instructions that accompanied the boot PROM.

Inserting the EtherLink III Adapter

Follow these steps to insert the EtherLink III adapter in the computer slot.

1. Prepare to install the adapter as follows:



WARNING: *The adapter board will be installed in a computer which operates with voltages that can be lethal. Before you remove the computer cover, observe the following steps to protect yourself and prevent damage to the system's components.*

- a. Turn off the computer and unplug the unit from its power source.
- b. Disconnect all cables that are connected to the main system unit.
- c. Remove any jewelry from your hands and wrists.
- d. Use only insulated or nonconductive tools.

2. Remove the computer's cover and choose an expansion slot, as shown in Figure 1-2.



NOTE: Your computer may be physically different from the one illustrated. If you have trouble following these steps, refer to the documentation that came with your computer.

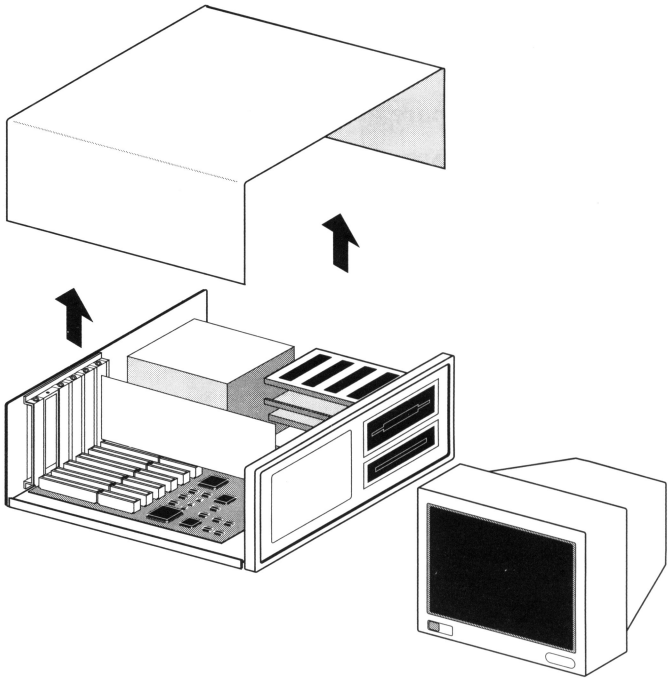


Figure 1-2. Removing the Cover

3. **Remove the expansion slot's backplate, as shown in Figure 1-3.**

You can install the 3C509, 3C509-TP, or 3C509-COMBO adapter in any 16-bit ISA or 32-bit EISA expansion slot. You can only install the 3C579 or 3C579-TP adapter in a 32-bit EISA expansion slot.

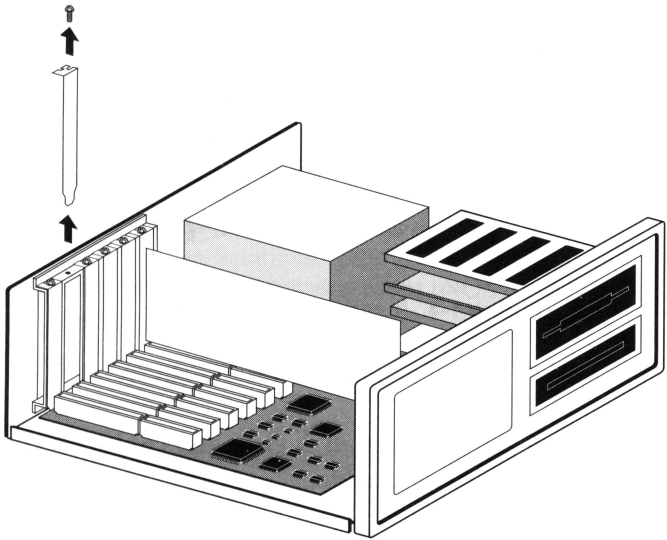


Figure 1-3. Removing the Backplate

4. **Insert the adapter into the expansion slot and secure it with the screw, as shown in Figure 1-4.**

Make sure that the card is firmly seated in the connector slot. Since the EISA slots are deeper than the ISA slots, EISA cards may need a firmer pressure to seat them correctly. When the EISA card is correctly seated, the gold fingers do not show.

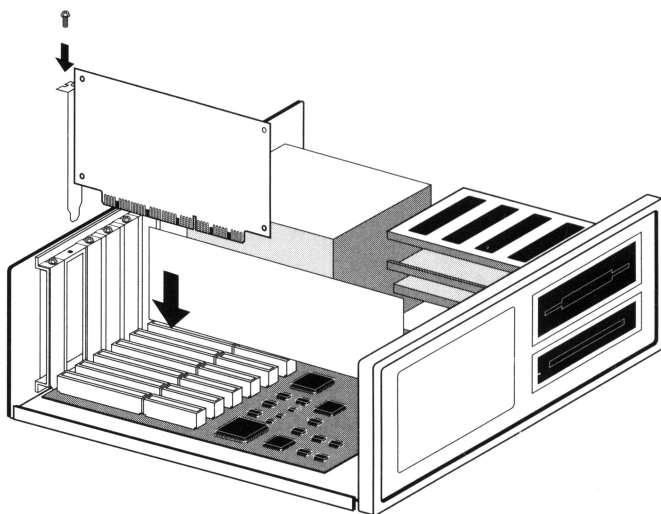


Figure 1-4. Inserting the Adapter

- 5. Replace the computer's cover.**
- 6. Reconnect all devices and cables except the network cable.**
- 7. Turn the computer on.**

Refer to Figure 1-1 and Table 1-1 (if necessary) to determine the type of adapter you have and then proceed to one of the following chapters to configure the adapter.

- Chapter 2 Configuring the ISA Adapter
- Chapter 3 Configuring the EISA Adapter
- Chapter 4 Configuring the ISA Adapter for an EISA Computer

Chapter 2

Configuring the ISA Adapter

This chapter explains how to configure an EtherLink III ISA adapter installed in an ISA computer. The section “Auto Installing a Single ISA Adapter for an ISA Computer and a NetWare NOS” explains how to use the AutoLink™ auto installation software feature of the *EtherDisk* diskette to configure your EtherLink III adapter and install the required drivers. To use the AutoLink software feature, you must meet the following requirements:

- Your network operating system (NOS) must be NetWare 2.x, 3.1x, or 4.x.
- Your computer must have an 80286 or higher processor.
- Your computer must have only one EtherLink III adapter installed in it.
- Your computer must be intended for use as a DOS ODI client.

If this does not describe your network environment, refer to the subsequent sections of this chapter to configure your EtherLink III adapter. EtherLink III adapters have an auto configuration utility that properly configures an adapter in most situations. For typical installations, refer to one of the following sections:

- Configuring a Single ISA Adapter for an ISA Computer and a Non-NetWare NOS

- Configuring Multiple ISA Adapters for an ISA Computer
- Changing Software Option Settings

Performing the procedures described in the section “Auto Installing a Single ISA Adapter for an ISA Computer and a NetWare NOS” accomplishes the following:

- Automatically configures the adapter
- Installs all necessary NetWare DOS ODI client software
- Automatically logs onto the server and updates the client software if your system administrator has already configured a 3Install account on your server
- Modifies the CONFIG.SYS and AUTOEXEC.BAT files for NetWare users

Refer to the section “Changing Software Option Settings” if any of the following situations apply to your configuration:

- You have a boot PROM.
- You are using a modem faster than 9600 baud.
- You want to optimize driver performance for OS/2® or Windows™.
- You wish to change the type of network connector.

Auto Installing a Single ISA Adapter for an ISA Computer and a NetWare NOS

EtherLink III adapters 3C509, 3C509-TP, and 3C509-COMBO are ISA adapters. If you are not sure what type of adapter you have, refer to Figure 1-1 and Table 1-1.

To use 3Com's AutoLink auto installation software feature for a NetWare client, perform these steps:

1. **Make sure that you have booted the computer under DOS, version 3.1 or later, and your computer is connected to the network (see Chapter 5).**
2. **Insert the *EtherDisk* diskette in a floppy drive on your computer and make that drive the current drive.**

For example, if the diskette drive is A, type the following command:

A: [Enter]

3. **Type at the prompt:**

INSTALL [Enter]

4. **The first time you use the diskette to install an adapter, a license screen appears. To accept the terms and conditions of the 3Com end-user software license agreement, type the following:**

Y



NOTE: To view the full text of the license agreement, press [F1].

The auto installation screen shown in Figure 2-1 appears.

5. **Read the screen and press [Enter].**
6. **When the main menu screen shown in Figure 2-2 appears, select NetWare DOS ODI Client and press [Enter].**



NOTE: Auto installation with configuration will take several minutes.

7. **Reboot the computer when the auto installation process is finished.**

When you do this, a DOS ODI client starts.



NOTE: To ensure that your computer is configured with the latest client software, ask your system administrator to configure a 3Install account on the server.

Instructions for configuring a 3Install account are contained in the *README.TXT* file located in the *\QINSTALL\SERVER* directory on the EtherDisk diskette.

This concludes the installation. If there are problems, refer to Chapter 7, “Performing Troubleshooting and Diagnostic Tests.”

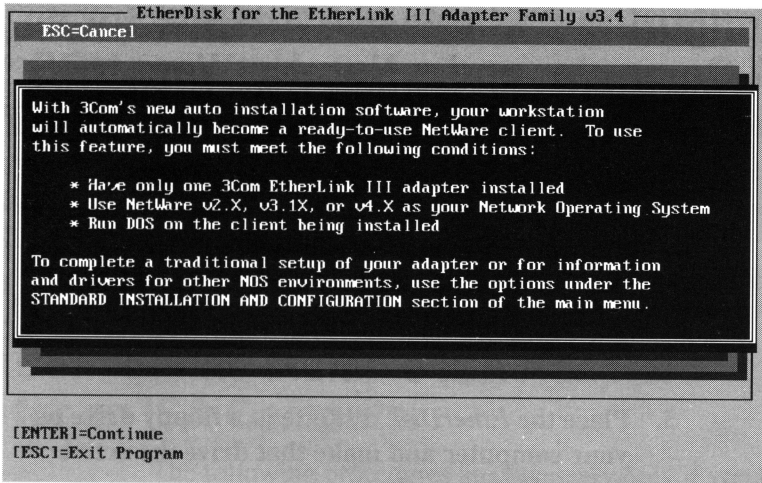


Figure 2-1. Auto Installation Screen

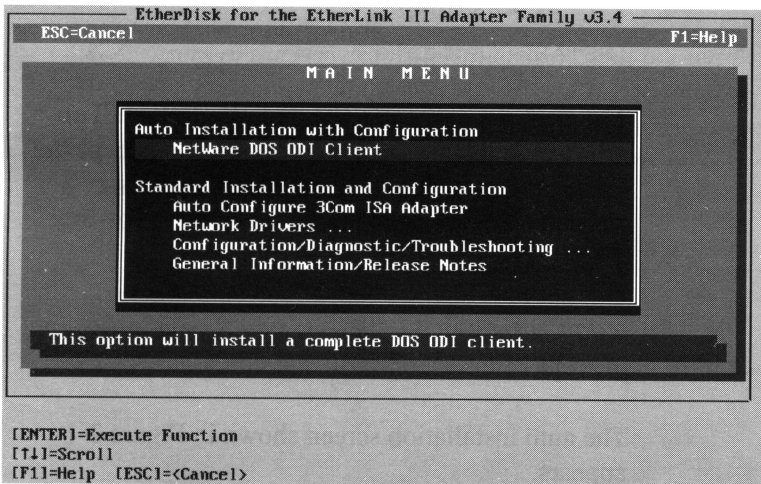


Figure 2-2. Main Menu

Configuring a Single ISA Adapter for an ISA Computer and a Non-NetWare NOS

To configure the EtherLink III adapter, proceed as follows:

1. **Make sure the EtherLink III adapter has been installed in your ISA computer (refer to Chapter 1 for instructions).**
2. **Boot your computer under DOS, version 3.1 or later.**
3. **Place the *EtherDisk* diskette in a floppy drive on your computer and make that drive the active drive. For example:**

A: [Enter]

4. **Type at the prompt:**

INSTALL [Enter]

5. **The first time you use the diskette to install an adapter, a license screen appears. To accept the terms and conditions of the 3Com end-user software license agreement, type the following:**

Y



NOTE: To view the full text of the license agreement, press [F1].

The auto installation screen shown in Figure 2-1 appears.

6. Read the screen and press [Enter].
7. When the main menu screen shown in Figure 2-2 appears, select Auto Configure 3Com ISA Adapter and press [Enter].

A message appears indicating successful configuration. Configuration is now complete. Proceed to Chapter 5, "Connecting to the Network."

Configuring Multiple ISA Adapters for an ISA Computer

The following procedures are necessary only if you have physically installed more than one EtherLink III ISA adapter in your computer.



NOTE: *If this computer is an operating server, notify all users of the server to save their work and log out from the network. The Configuration and Diagnostic Program disrupts the normal operation of servers and workstations, so work that is not saved may be lost.*

Configuring the First Adapter

After you have started the *EtherDisk* diskette program, as explained in steps 1 through 5 in the previous section, follow the steps below:

1. When the main menu shown in Figure 2-2 appears, select **Configuration/Diagnostic/Troubleshooting**.

Select Configuration and Diagnostic from the next screen. When you have multiple EtherLink III adapters installed in your computer, the dialog box that appears is similar to the one shown in Figure 2-3.

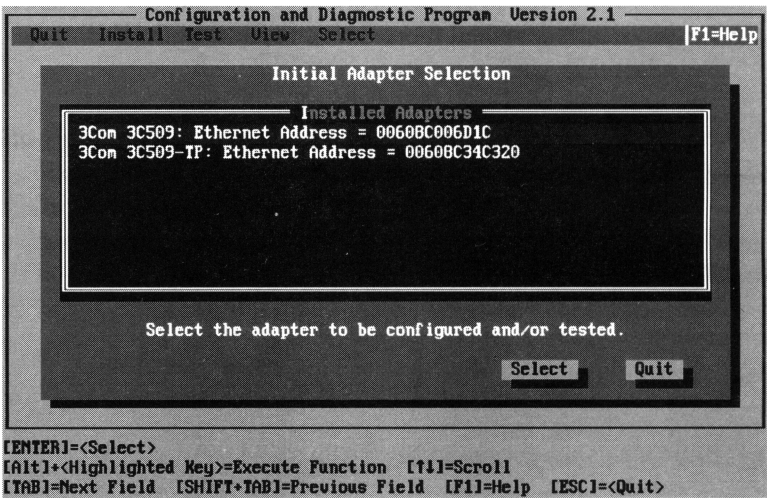


Figure 2-3. Main Window with Multiple Adapters

2. Highlight the adapter you want to configure by using the arrow keys. Then press [Enter], or tab to the Select item on the menu bar and press [Enter].

A screen similar to the one shown in Figure 2-4 appears, showing your selection.

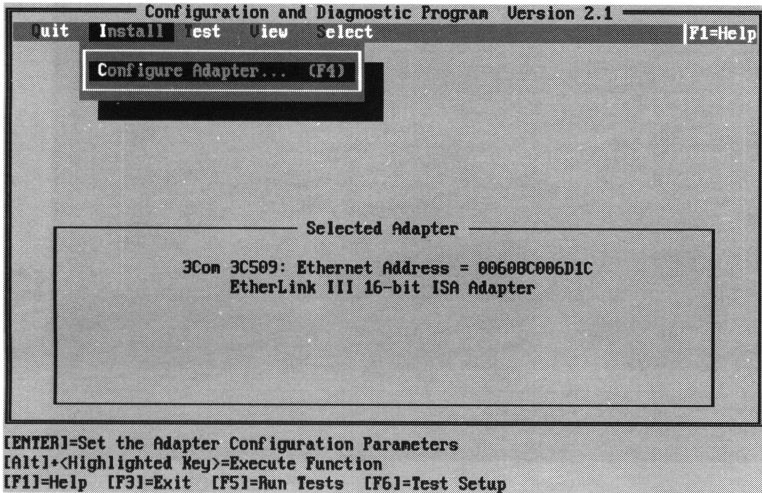


Figure 2-4. Main Window with First Adapter Selected

- 3. **The menu selection Configure Adapter appears already highlighted. Press [Enter].**

A configuration screen similar to that shown in Figure 2-5 appears.

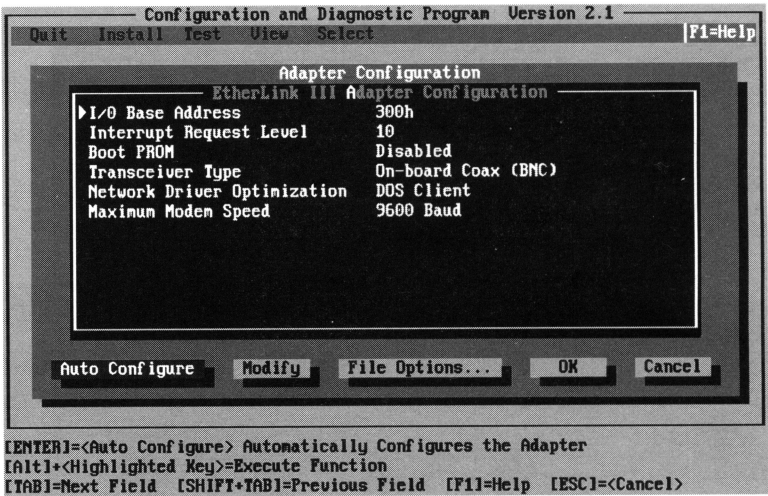


Figure 2-5. Configuration Dialog Box

- 4. **From the screen similar to the one shown in Figure 2-5, make sure the <Auto Configure> command button is highlighted and press [Enter].**

This automatically configures the I/O Base Address, Interrupt Request Level, and Transceiver Type on the adapter to settings that do not conflict with any other device in your computer. To change any of the above settings or those for the Boot PROM, Network Driver Optimization, Maximum Modem Speed, or Transceiver Type, follow the steps in “Changing Software Option Settings.”

5. **The <OK> command button becomes highlighted after configuration is complete. Press [Enter] again to accept the configuration parameters.**

Configuring the Remaining Adapter(s)

To configure the rest of the adapters, return to the Configuration and Diagnostic screen and repeat the steps in the previous section. Select each adapter as it needs to be configured.

When all adapters have been configured, proceed to Chapter 5, "Connecting to the Network."

Changing Software Option Settings

You should change the default settings of an EtherLink III adapter only if a conflict with another device or card exists.

The default settings can also be changed in the following situations:

- You have a boot PROM.
- You are using a modem faster than 9600 baud.
- You want to optimize driver performance for OS/2 or Windows.
- You wish to change the type of network connector.

For information on settings of other standard devices, select the Configuration/Diagnostic/Troubleshooting option on the *EtherDisk* diskette main menu.

Either on-board coax or on-board TP is the default, depending on which adapter you are configuring. Coax is the default setting for the 3C509-COMBO adapter.

Table 2-1 lists each software option, the default setting, and the available settings. Refer to the on-line help (using [F1] when the option is highlighted) for more information about each setting.

Table 2-1. Option Settings

Option	Default Setting	Available Settings
I/O Base Address	300h	200h, 210h, 220h, 230h, 240h, 250h, 260h, 270h, 280h, 290h, 2A0h, 2B0h, 2C0h, 2D0h, 2E0h, 2F0h, 300h, 310h, 320h, 330h, 340h, 350h, 360h, 370h, 380h, 390h, 3A0h, 3B0h, 3C0h, 3D0h, 3E0h, EISA
Interrupt Request Level	10	3, 5, 7, 9, 10, 11, 12, 15
Boot PROM	Disabled	Disabled, 8K, 16K, 32K
Transceiver Type	On-board	On-board Coax (BNC) or On-board TP (RJ-45) External (AUI/DIX)
Network Driver	DOS Client	DOS Client, Windows or OS/2 Client, Server
Maximum Modem Speed (fastest modem installed)	9600 Baud	No Modem, 1200, 2400, 9600, 19200, or 38400 Baud

To change the software option settings, follow these steps:



NOTE: *If this computer is an operating server, notify all users of the server to save their work and log out from the network. The Configuration and Diagnostic Program disrupts the normal operation of servers and workstations, so work that is not saved may be lost.*

1. **Make sure the EtherLink III adapter has been installed in your ISA computer (refer to Chapter 1 for instructions).**
2. **Boot your computer under DOS, version 3.1 or later.**
3. **Place the *EtherDisk* diskette in a floppy drive on your computer and make that drive the active drive. For example:**

A: [Enter]

4. **Type at the prompt:**

INSTALL [Enter]

First the auto installation screen appears, as shown in Figure 2-1. Then the main menu appears with a list of options, as shown in Figure 2-2.

5. **Select Configuration/Diagnostic/Troubleshooting on the main menu.**
6. **When the Configuration and Diagnostic screen appears, select Configuration and Diagnostic Program.**
7. **If you have multiple adapters installed, as shown in Figure 2-3, use the arrow keys to select the adapter and press [Enter].**
8. **If you have a single adapter installed, the Configure Adapter option appears already highlighted on the Install pull-down menu. Press [Enter].**

A screen similar to the one shown in Figure 2-5 appears.

9. Press [Tab] to highlight the main dialog box, and use the arrow keys to highlight one of the parameter options. Press [Enter].

A second dialog box appears.

10. Use the arrow keys to scroll through the list of settings for that option. Select a setting and press [Enter].

11. Continue this procedure with any of the other options.

Refer to the on-line help (using [F1] when the option is highlighted) for more information about each of the settings.

12. Press [Tab] to highlight <OK>. Press [Enter].

You must highlight <OK> and press [Enter] to save the new settings to the adapter.



CAUTION: *An ISA adapter configured for an EISA computer will not work in an ISA computer. Refer to the section “Reconfiguring the ISA Adapter for an ISA Computer” in Chapter 4 for instructions.*



NOTE: *If you want to use the same settings on other adapters, you can save the configuration settings to a file. Select <Save> under <File Options> in the Adapter Configuration dialog box. For example, type:*

D:\CONFIG\3C5xx.SET

where xx represents the last two digits of the adapter number. This saves the settings to the default file 3C509.SET for an ISA adapter or 3C579.SET for an EISA adapter in the CONFIG directory in drive D. Use 3C509C for the 3C509-COMBO. Refer to the on-line help (using [F1]) for more information.

Chapter 3

Configuring the EISA Adapter

The EtherLink III 3C579 and 3C579-TP adapters are EISA adapters. If you are not sure what type of adapter you have, refer to Figure 1-1 and Table 1-1.

This chapter first explains how to configure the EISA computer to accept the EISA adapter using the EISA configuration diskette that accompanied your computer. Secondly, the chapter explains how to change the Network Optimization or Maximum Modem Speed settings using the *EtherDisk* diskette that accompanied your EtherLink III adapter. The EISA computer configuration must be completed before these settings can be changed. All other parameters are automatically configured by the EISA configuration diskette that came with the computer. Thirdly, the chapter explains how to start the EtherLink III adapter AutoLink auto installation software for the NetWare network operating system (NOS) environment using the *EtherDisk* diskette.

This AutoLink auto installation procedure accomplishes the following:

- Installs all necessary NetWare DOS ODI client software
- Automatically logs onto the server and updates the client software if your system administrator has already configured a 3Install account on your server
- Modifies the CONFIG.SYS and AUTOEXEC.BAT files for NetWare users

This chapter consists of the following sections:

- Configuring the EISA Computer to Accept an EISA Adapter
- Changing Software Option Settings
- Auto Installing the EISA Adapter for a NetWare NOS

Once you have configured the EISA computer to accept the adapter, you can start the auto installation procedure from the *EtherDisk* diskette if your network environment meets the following requirements:

- Your network operating system must be NetWare 2.x, 3.1x, or 4.x.
- Your computer must have an 80286 or higher processor.
- Your computer must have only one EtherLink III adapter installed in it.
- Your computer must be intended for use as a DOS ODI client.

Configuring the EISA Computer to Accept an EISA Adapter

To configure the EISA computer to accept the EISA adapter, perform the following steps:

1. **Install the EtherLink III adapter in your EISA computer (refer to Chapter 1 for instructions).**
2. **Insert the EISA configuration diskette provided with your computer into drive A.**
3. **Turn the power switch on.**

4. **Follow the on-line prompts and the instructions that accompanied your EISA computer to run the EISA configuration program.**



NOTE: *The sequence of configuration steps required for some EISA computers may vary from the steps above. Consult the configuration program manual provided by the manufacturer of your computer for more details.*

5. **When the EISA configuration program asks for .CFG files to copy, remove the EISA configuration diskette.**
6. **Insert the *EtherDisk* diskette.**

Press [Enter], and use the following files:

- !TCM5092.CFG for the 3C579-TP adapter
- !TCM5093.CFG for the 3C579 adapter



CAUTION: *An ISA adapter configured for an ISA computer will work in an EISA computer. However, 3Com recommends that it be configured for an EISA computer using the EtherDisk Configuration and Diagnostic Program before it is installed in an EISA computer. Refer to “Configuring the ISA Adapter for an EISA Computer” in Chapter 4 for instructions.*

7. **When the adapter is configured successfully, proceed to one of the following, depending on your situation:**
 - a. Refer to the section “Changing Software Options Settings” if you need to change the Network Driver Optimization or Maximum Modem Speed settings.
 - b. Refer to the section “Auto Installing the EISA Adapter for a NetWare NOS” if your environment meets the auto installation requirements described at the beginning of this chapter.

- c. Refer to Chapter 5, "Connecting to the Network," if you do not need to change the settings and your environment does not meet the auto installation requirements.

Changing Software Option Settings

The EISA configuration program automatically configures the following parameters on your EISA adapter:

- Slot Number
- Interrupt Request Level
- Boot PROM Enable/Disable
- Transceiver Type

To change the Network Driver Optimization or Maximum Modem Speed settings, use the *EtherDisk* diskette Configuration and Diagnostic Program, as explained in the section "Changing Software Option Settings" in Chapter 2.

Table 3-1 lists these software options, the default setting, and the available settings. Refer to the on-line help (using [F1] when each option is highlighted) for more information about each of the settings.



NOTE: When you run the *EtherDisk Configuration and Diagnostic Program* to change software options, make sure that network drivers or memory managers have not been loaded.

Table 3-1. EISA Option Settings

Option	Default Setting	Available Settings
Network Driver Optimization	DOS Client	DOS Client, Windows or OS/2 Client, Server
Maximum Modem Speed	9600 Baud	No Modem, 1200, 2400, 9600, 19200, or 38400 Baud

Network Driver Optimization

This option specifies whether to optimize the network driver for a DOS client, a Microsoft® Windows or OS/2 client, or a server environment. Changing this option may improve network performance as well as your system's responsiveness. The drivers will attempt to optimize various parameters, such as CPU utilization, to the environment specified. For example, a client may use a larger percentage of the CPU under DOS to improve network throughput. On a server this may be inappropriate, so the driver will attempt to minimize the CPU usage to optimize performance in a server environment.

Maximum Modem Speed

The modem speed you choose tells the adapter how long it can disable interrupts without causing problems with the serial port. The lower the modem speed, the longer the adapter can keep interrupts disabled. On slower computers, running with longer disabled interrupts can improve network performance. On those computers, changing the option setting to 2400, 1200, or No Modem may improve performance. On faster computers, there is little performance difference between the settings.

If you experience problems with your modem, such as dropped characters or excessive retries, selecting a higher modem speed should help. If the problem is not due to the EtherLink III driver, changing the modem speed will not make a difference.



NOTE: The default value (9600 baud) works whether you have a modem or not, or even if the modem is slower than the default, for example 2400 baud. Do not change the default modem speed setting unless you experience problems.

If you experience compatibility problems between your adapter and another device in the system other than a modem, selecting a higher modem speed may help.

Auto Installing the EISA Adapter for a NetWare NOS

You can start the AutoLink auto installation procedure from the *EtherDisk* diskette if your network environment meets the following requirements:

- Your network operating system must be NetWare 2.x, 3.1x, or 4.x.
- Your computer must have an 80286 or higher processor.
- Your computer must have only one EtherLink III adapter installed in it.
- Your computer must be intended for use as a DOS ODI client.

If your system administrator has already configured a 3Install account on your server, the AutoLink feature automatically logs onto the server and updates the client software.

To start the auto installation, follow these steps:

- 1. Make sure that you have booted the computer under DOS and your computer is connected to the network (see Chapter 5).**

2. Insert the *EtherDisk* diskette in a floppy drive on your computer and make that drive the current drive.

For example, if the diskette drive is A, type the following command:

A: [Enter]

3. Type at the prompt:

INSTALL [Enter]

4. The first time you use the diskette to install an adapter, a license screen appears. To accept the terms and conditions of the 3Com end-user software license agreement, type the following:

Y



NOTE: To view the full text of the license agreement, press [F1].

The auto installation screen shown in Figure 3-1 appears.

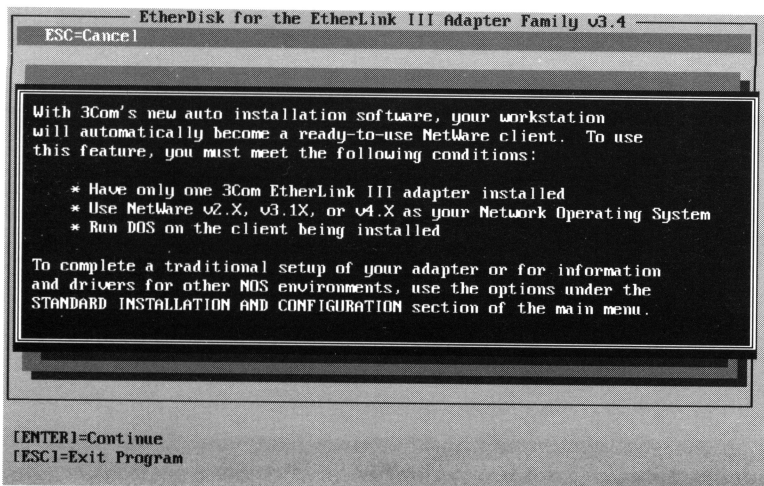


Figure 3-1. Auto Installation Screen

- 5. Read the screen and press [Enter].
- 6. When the main menu screen shown in Figure 3-2 appears, select NetWare DOS ODI Client and press [Enter].



NOTE: Auto installation with configuration will take several minutes.

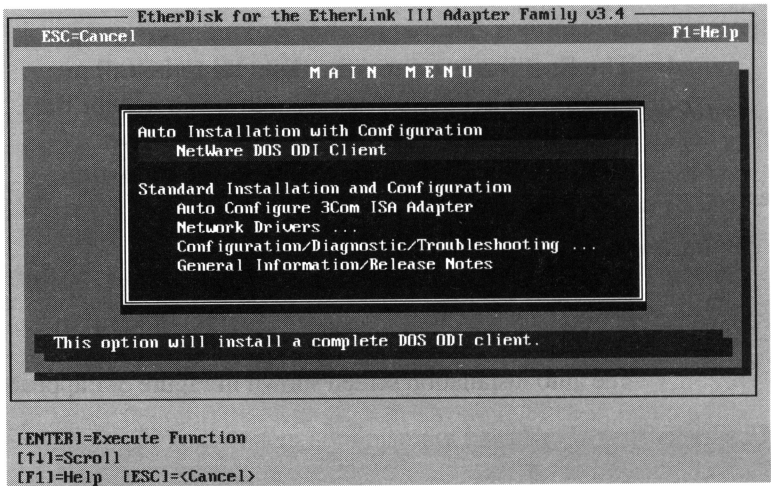


Figure 3-2. Main Menu

- 7. Reboot the computer when the auto installation process is finished.

When you do this, a DOS ODI client starts.



NOTE: *To ensure that your computer is configured with the latest client software, ask your system administrator to configure a 3Install account on the server.*

Instructions for configuring a 3Install account are contained in the README.TXT file located in the \QINSTALL\SERVER directory on the EtherDisk diskette.

This concludes the installation. If there are problems, refer to Chapter 7, “Performing Troubleshooting and Diagnostic Tests.”

Chapter 4

Configuring the ISA Adapter for an EISA Computer

This chapter explains how to configure an EtherLink III ISA adapter for installation in an EISA computer.

This chapter contains information under the following sections:

- Configuring the ISA Adapter for an EISA Computer
- Reconfiguring the ISA Adapter for an ISA Computer

Configuring the ISA Adapter for an EISA Computer

EtherLink III adapters 3C509, 3C509-TP, and 3C509-COMBO are ISA adapters. If you are not sure what type of adapter you have, refer to Figure 1-1 and Table 1-1.

EISA computers come with an automatic configuration program that allocates the system's resources to each device in the computer. Putting the 3C509, 3C509-TP, or 3C509-COMBO adapter in EISA mode allows it to be automatically configured by that program to the correct settings for the EISA computer. The ISA adapter can also be changed back to work in an ISA computer.

To configure the EtherLink III ISA adapter to work in an EISA computer, follow these steps:

1. **Install the EtherLink III adapter in your EISA computer (refer to Chapter 1 for instructions).**
2. **Boot your computer under DOS, version 3.1 or later.**
3. **Place the *EtherDisk* diskette in the floppy drive on your computer and make that drive the active drive.**

For example, if the diskette drive is A, type the following command:

A: [Enter]

4. **Type at the prompt:**

INSTALL [Enter]

5. **The first time you use the diskette to install an adapter, a license screen appears. To accept the terms and conditions of the 3Com end-user software license agreement, type the following:**

Y



NOTE: To view the full text of the license agreement, press [F1].

The auto installation screen shown in Figure 4-1 appears.

6. **Read the screen and press [Enter].**
7. **When the main menu screen shown in Figure 4-2 appears, select Configuration/Diagnostic/Troubleshooting and press [Enter].**

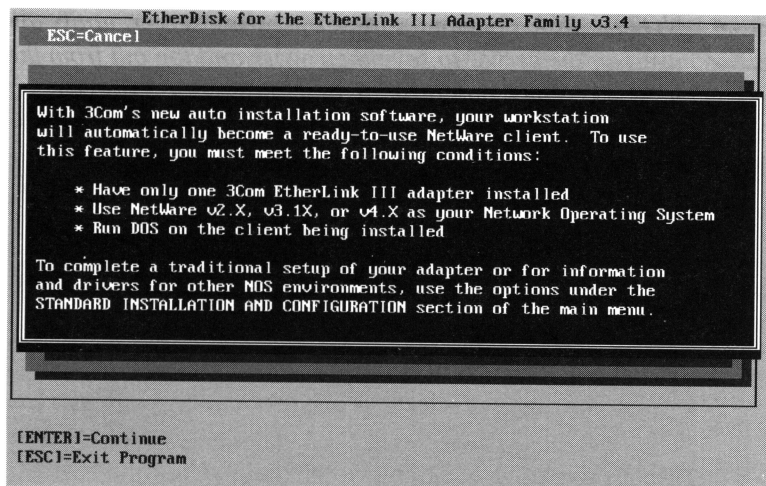


Figure 4-1. Auto Installation Screen

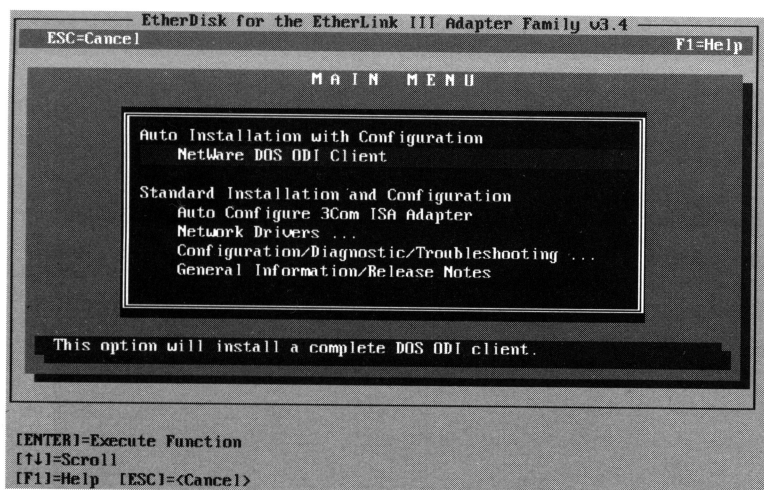


Figure 4-2. Main Menu



NOTE: *If this computer is an operating server, notify all users of the server to save their work and log out from the network. The Configuration and Diagnostic Program disrupts the normal operation of servers and workstations, so work that is not saved may be lost.*

8. When the Configuration and Diagnostic screen appears, select Configuration and Diagnostic Program.
9. If you have multiple adapters installed, use the arrow keys to select the adapter and press [Enter].
10. Under the Install pull-down menu, Configure Adapter appears already highlighted. Press [Enter].

The screen identifying the adapter then appears, as shown in Figure 4-3.

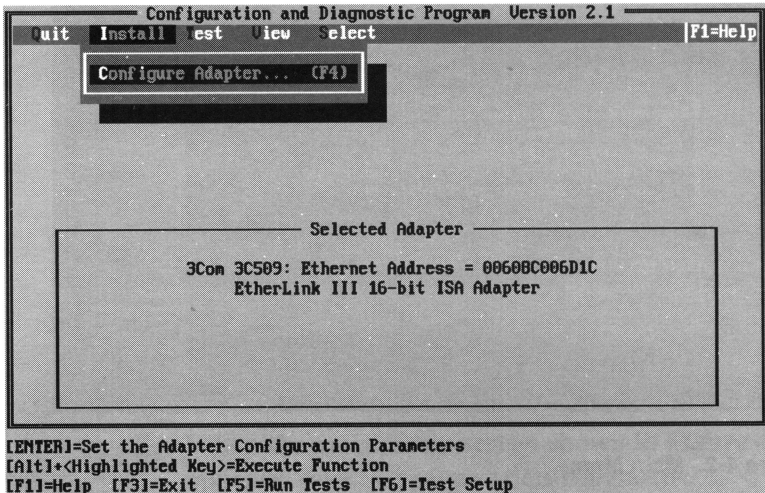


Figure 4-3. Main Window with Adapter Selected

When the Configure Adapter dialog box appears, as shown in Figure 4-4, select the <Modify> command button.

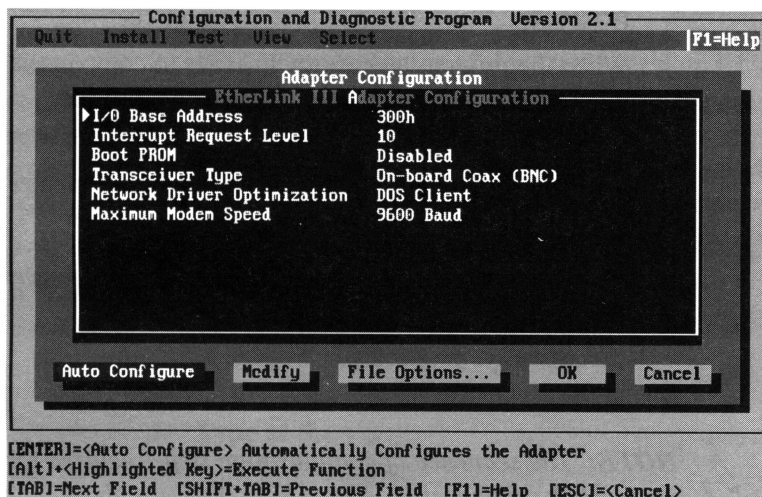


Figure 4-4. Configuration Dialog Box

11. Select EISA with the arrow keys and press [Enter].

This changes the I/O base address setting.

12. Save the new configuration setting to the adapter by tabbing to <OK> and pressing [Enter].
13. Exit the program and remove the *EtherDisk* diskette.
14. Insert the EISA configuration diskette provided with your computer into drive A.

15. Reboot the computer.

16. Follow the instructions that accompanied your EISA computer to run the EISA configuration program.

When the program asks for .CFG files to copy, insert the *EtherDisk* diskette, press [Enter], and use the following files:

- !TCM5094.CFG for the 3C509-COMBO adapter
- !TCM5091.CFG for the 3C509 coax adapter
- !TCM5090.CFG for the 3C509-TP adapter

17. When the adapter has been configured successfully, proceed to Chapter 5, “Connecting to the Network.”



NOTE: *The sequence of configuration steps required for some EISA computers may vary from the steps above. Consult the configuration program manual provided by the manufacturer of your computer for more details.*

Reconfiguring the ISA Adapter for an ISA Computer



NOTE: *This procedure is only for an ISA adapter (3C509, 3C509-TP, or 3C509-COMBO) that has been previously configured to function in an EISA computer.*

If you are not sure what type of adapter you have, refer to Figure 1-1 and Table 1-1.

To reconfigure an ISA adapter, perform the following steps:

1. **Install the EtherLink III adapter in your EISA computer (refer to Chapter 1 for instructions).**
2. **Boot your computer under DOS, version 3.1 or later.**
3. **Make a backup copy of your *EtherDisk* diskette, place the backup copy in a floppy drive on your computer, and make that drive the active drive.**

For example, if the diskette drive is A, type the following command:

A: [Enter]

4. **Type at the prompt:**

INSTALL [Enter]

5. **The first time you use the diskette to install an adapter, a license screen appears. To accept the terms and conditions of the 3Com end-user software license agreement, type the following:**

Y



NOTE: To view the full text of the license agreement, press [F1].

The auto installation screen shown in Figure 4-1 appears.

6. **Read the screen and press [Enter].**

- 7. When the main menu screen shown in Figure 4-2 appears, select Configuration/Diagnostic/Troubleshooting and press [Enter].**
- 8. When the Configuration and Diagnostic screen appears, select Configuration and Diagnostic Program.**
- 9. If you have multiple adapters installed, use the arrow keys to select the adapter and press [Enter].**
- 10. If you have a single adapter installed, Configure Adapter appears already highlighted. Press [Enter].**

The screen identifying the adapter then appears, as shown in Figure 4-3.

When the Configure Adapter dialog box appears, as shown in Figure 4-4, select the <Modify> command button.

- 11. Select non-EISA with the arrow keys and press [Enter].**

This changes the I/O base address setting, and it appears changed on a screen similar to the one shown in Figure 4-4.

- 12. Select the remaining settings for Interrupt Request Level, Boot PROM, Transceiver Type, Network Driver Optimization, and Maximum Modem Speed, if desired, or accept the defaults.**

Refer to the on-line help (using [F1] when the option is highlighted) for more information about each of the settings.

- 13. Save the new configuration setting to the adapter by tabbing to <OK> and pressing [Enter].**
- 14. Insert the EISA system configuration utility diskette and reboot the computer.**
- 15. Remove the adapter from the EISA computer and install it in the ISA computer, following the instructions in Chapter 1.**

Chapter 5

Connecting to the Network

This chapter describes how to connect different types of network cables to EtherLink III adapters.

This chapter contains the following sections:

- Types of Connectors
- Connecting to the On-board Transceiver
- Connecting to the External Transceiver

Refer to the section “Changing Software Option Settings” in Chapter 2 for information on changing the Transceiver Type software option.

Types of Connectors

The following types of network cable connectors are found on EtherLink III adapters:

Cable Type	Software Setting	Connector
Thin coaxial	On-board transceiver*	BNC
Twisted-pair	On-board transceiver†	RJ-45
Thick coaxial	External transceiver	AUI (15-pin)

* Default setting for the 3C509, 3C509-COMBO, or 3C579 adapter.
† Default setting for the 3C509-TP or 3C579-TP adapter.

Figure 5-1 shows the backplates of the adapters.

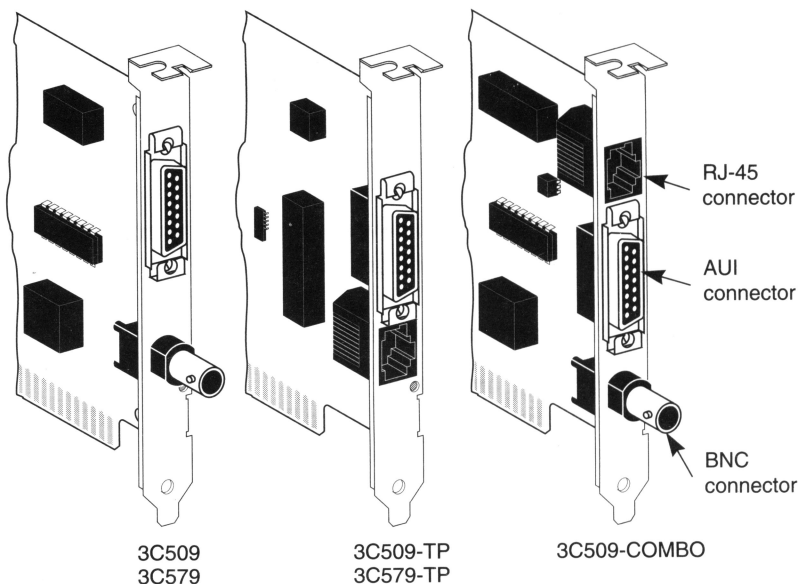


Figure 5-1. Adapter Backplates

Connecting to the On-board Transceiver

Follow these steps to connect the appropriate cable to the EtherLink III adapter.

Connecting to Thin Ethernet Cable

The EtherLink III coax adapters (3C509, 3C579, and 3C509-COMBO) are factory-set to use the on-board transceiver with thin Ethernet cable.

1. **Locate the adapter's BNC connector on the backplate.**
2. **Locate a T connector on the thin Ethernet cable.**

3. **Connect the T connector to the adapter's BNC connector (see Figure 5-2).**
 - a. Align the T connector's slots with the pegs on the BNC connector.
 - b. Push the T connector in and twist it clockwise until it stops.

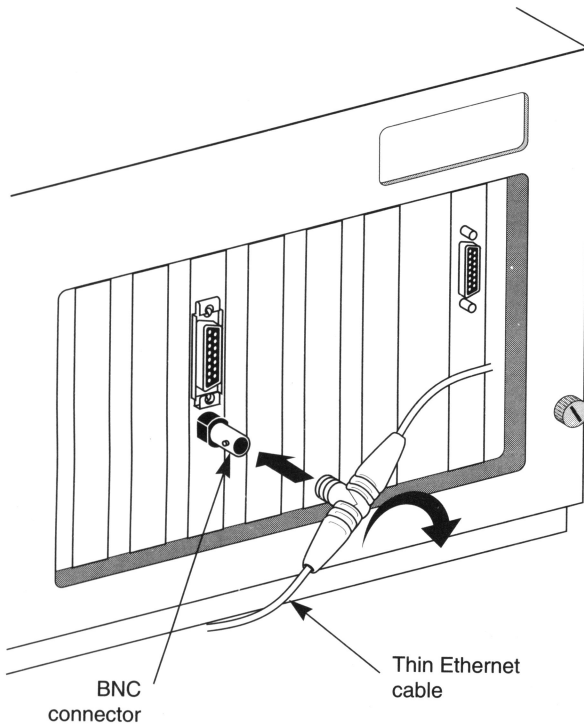


Figure 5-2. Connecting Thin Ethernet Cable

Connecting to Twisted-pair Cable

The EtherLink III 10BASE-T adapters (3C509-TP and 3C579-TP) are factory-set to use the on-board transceiver with twisted-pair cable.



NOTE: *The 3C509-COMBO can also be connected to a twisted-pair cable. If you do this, make sure to change the software default to On-board TP, as explained in the section “Changing Software Option Settings” in Chapter 2.*

1. **Make sure that the connector on your cable is wired appropriately for standard 10BASE-T adapter cards.**
2. **Align the RJ-45 plug on the end of the twisted-pair cable with the notch on the adapter’s connector.**

Refer to Appendix B for RJ-45 connector pin assignments.

3. **Insert the RJ-45 plug into the adapter socket, as shown in Figure 5-3.**



NOTE: *The LED on the 3C509-TP or 3C579-TP adapter confirms that there is a link to the hub. The LED is enabled only if the Group 3 diagnostic test was run or the network drivers are loaded.*

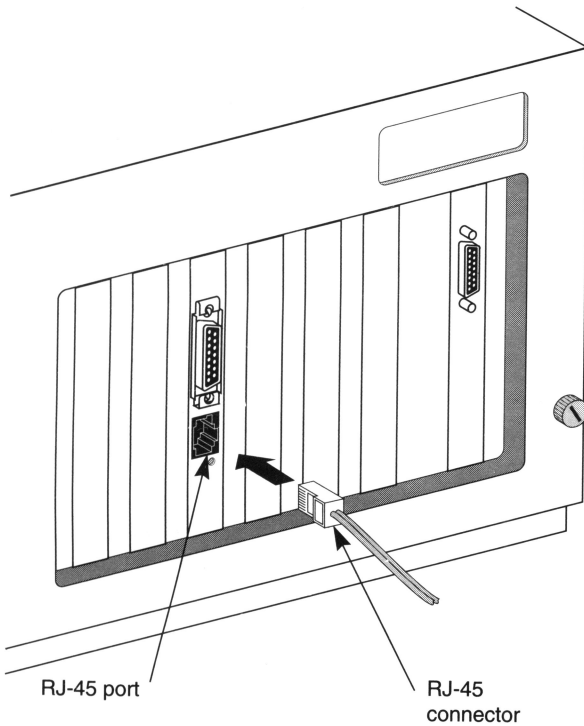


Figure 5-3. Connecting Twisted-pair Cable

Connecting to the External Transceiver

If you are connecting an external transceiver, make sure that the Transceiver Type option in the Configure Adapter dialog box is set to External. Refer to the section “Changing Software Option Settings” in Chapter 2 for information on changing the Transceiver Type software option. Appendix B lists the pin assignments for the AUI (attachment unit interface) connector.

To connect the AUI cable:

- 1. **Locate the adapter's AUI connector and move the slide latch to the closed position to lock the cable, as shown in Figure 5-4.**

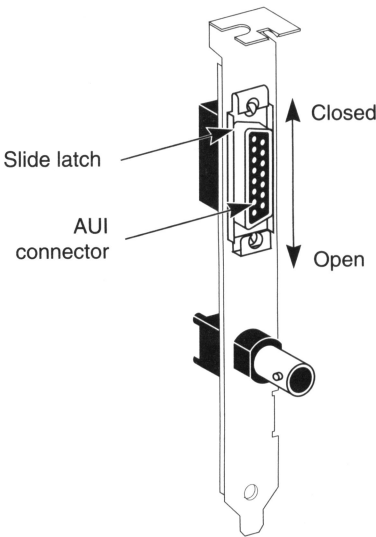


Figure 5-4. Slide Latch

2. **Connect the AUI cable to the AUI connector on the adapter, as shown in Figure 5-5.**

Move the slide latch to the closed position to lock the cable in place.

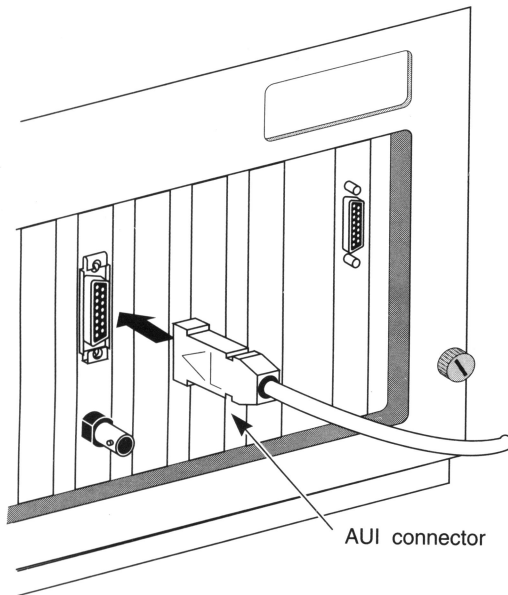


Figure 5-5. Connecting the AUI Cable

- 3. Connect the other end of the AUI cable to the external transceiver, as shown in Figure 5-6.

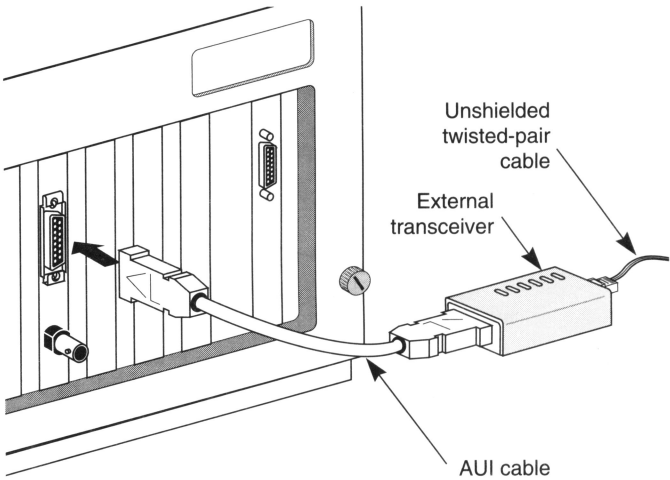


Figure 5-6. Example of Attaching the External Transceiver

Chapter 6

Installing the Network Drivers

This chapter describes how to install the network driver required to let the EtherLink III adapters work with your network operating system (NOS). In addition to other important information concerning EtherLink III adapters and their configuration, the *EtherDisk* diskette contains the latest versions of the network drivers available when 3Com shipped the adapter.

To obtain network operating system drivers not included on the *EtherDisk* diskette, contact the manufacturer of that network operating system or application. Not all of the available NOS drivers are contained on the *EtherDisk* diskette. Additional drivers are provided by 3Com through its bulletin board services. To obtain software driver updates and patches, use one of the bulletin board services listed in Appendix D, "Technical Support."

Installing Drivers from the *EtherDisk* Diskette

The *EtherDisk* diskette contains files and drivers, a utility program to automatically install some drivers, and software driver directories that include NDIS and Novell® NetWare drivers. If you used the AutoLink auto installation software feature for a single ISA or EISA adapter under the conditions described in Chapters 2 and 3, NetWare DOS ODI client driver installation was performed automatically, and no further installation procedures are necessary. If your situation does not meet the conditions required by the auto installation feature, follow the steps below to load the appropriate network driver.

1. **Make sure that you have installed and configured the adapter, and booted the computer under DOS.**
2. **If the *EtherDisk* diskette is already in your floppy drive, go directly to step 7. Otherwise, insert the *EtherDisk* diskette in a floppy drive on your computer.**
3. **Make that drive the current drive.**

For example, if the diskette drive is A, type the following command:

A: [Enter]

4. **Type at the prompt:**

INSTALL [Enter]

5. The first time you use the diskette to install an adapter, a license screen appears. To accept the terms and conditions of the 3Com end-user software license agreement, type the following:

Y

The auto installation screen shown in Figure 6-1 appears.

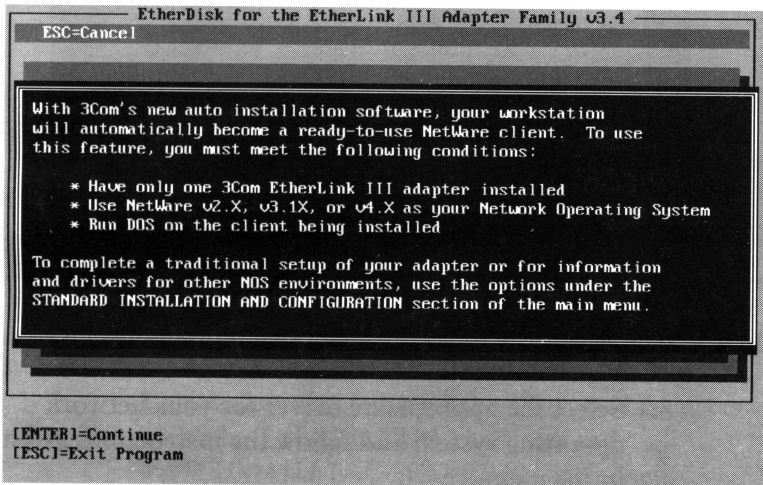


Figure 6-1. Auto Installation Screen

6. Read the screen and press [Enter].

7. When the main menu screen shown in Figure 6-2 appears, select Network Drivers and press [Enter].

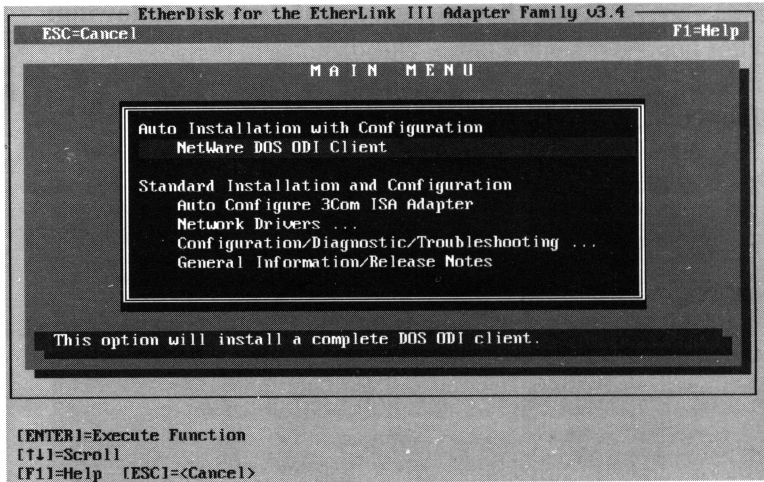


Figure 6-2. Main Menu

8. Select the appropriate driver for your network operating system and follow the instructions given in the menu.

For some operating systems, drivers are updated or copied to the selected disk drive automatically, depending on the menu selection. For others, selecting the driver will provide you with on-line instructions for installing the driver.

Refer to your network operating system manuals for instructions about using the driver with your NOS.



NOTE: All network adapters in the EtherLink III Parallel Tasking adapter family use the same drivers. The drivers are backward-compatible with other members of the family.

NetWare 4.x Server Drivers

The *EtherDisk* diskette contains a NetWare 4.x server driver and four NetWare Loadable Modules (NLMs) that enable the NetWare 4.x driver to be used with NetWare 3.11 software. These NLMs are:

- LSLENH.NLM
- PATCHMAN.NLM
- MSM31X.NLM
- ETHERTSM.NLM

To load the 4.x server driver while running NetWare 3.11, enter the following commands in the order shown below. These files must all be copied to the same subdirectory. If you are not loading them from the SYSTEM volume, you must supply the DRIVEID:\PATH to the location of the files.

```
load LSLENH.NLM [Enter]  
load 3C5X9.LAN [Enter]
```

If this order is not followed, the system will not operate correctly. LSLENH.NLM loads itself and PATCHMAN.NLM. 3C5X9.LAN loads itself, MSM31X.NLM, and ETHERTSM.NLM. When this has been done, bind the protocol to the driver as usual.



NOTE: When running the 3C5X9.LAN driver with NetWare 3.11, you must update the MONITOR.NLM file that accompanied NetWare 3.11 with the MONITOR.NLM file on the *EtherDisk* diskette in the directory \NETWARESRV31\ . This is done automatically during installation.

Using Multiple Adapters in a Computer

The following information is helpful if you have more than one EtherLink III adapter per computer.

If You Are Running 3+Open or LAN Manager

If you are running 3Com's 3+Open™ or Microsoft LAN Manager network operating systems and you change the I/O base address setting, you must also change the IOADDRESS line in the PROTOCOL.INI file to use the new setting. The file is located on the startup diskette or the hard drive.

If you have reconfigured the adapter for an EISA computer, the PROTOCOL.INI file looks for the parameter *SLOT=number* rather than the I/O base address.

If You Are Running NetWare

If you are running the Novell NetWare network operating system and you select the EISA setting, you must use the SLOT parameter in the NET.CFG file. If the parameter is not listed in the file, then you must add it. Note that Compaq® EISA computers have reversed the slot numbers.

If you are running NetWare and you have installed multiple adapters in an ISA computer, you will see the following error message when you try to load the DOS ODI drivers:

```
Multiple EtherLink III Adapters found.  
Use NET.CFG to specify I/O Port.
```

You need to specify which adapter you want the driver to recognize by adding the I/O base address into the NET.CFG file using the PORT statement.

Chapter 7

Performing Troubleshooting and Diagnostic Tests

This chapter explains how to isolate and solve problems with EtherLink III adapters.

This chapter contains information under the following sections:

- Diagnostic Tests
- Miscellaneous Checks
- Technical Support Sources



NOTE: Make sure that the 3C509, 3C579, 3C509-TP, 3C579-TP, or 3C509-COMBO adapter is installed in either the Industry Standard Architecture (ISA) bus or the Extended Industry Standard Architecture (EISA) bus. The 3C579 and 3C579-TP can only be installed in an EISA bus.

Diagnostic Tests

This section describes how to use the Configuration and Diagnostic Program to test EtherLink III adapters.

The diagnostic program is located on the *EtherDisk* diskette. The individual tests are described in detail in the section “Adapter Test Setup” later in this chapter.



NOTE: Make sure that no network drivers or memory managers are installed before you run the Configuration and Diagnostic Program.

This section contains information under the following headings:

- Starting the Diagnostic Program
- Adapter Test Setup
- Getting Help If a Test Fails
- Changing the Test Setup
- Group 2 and Group 3 Test Setup
- Group 2 Test
- Group 3 Test

Starting the Diagnostic Program

To use the *EtherDisk* diskette Configuration and Diagnostic Program, use the following steps:

1. **Boot your computer under DOS, version 3.1 or later.**
2. **Place the *EtherDisk* diskette in a floppy drive on your computer and make that drive the active drive. For example:**

A: [Enter]

3. **Type at the prompt:**

INSTALL [Enter]

4. **When an auto installation screen similar to that shown in Figure 7-1 appears, press:**

Y

5. **Read the screen and press [Enter].**

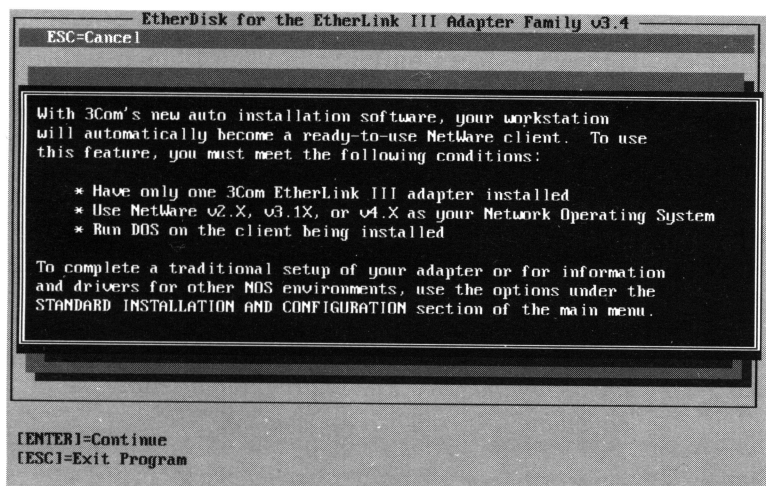


Figure 7-1. Auto Installation Screen

6. When the main menu screen shown in Figure 7-2 appears, select Configuration/Diagnostic/Troubleshooting and press [Enter].

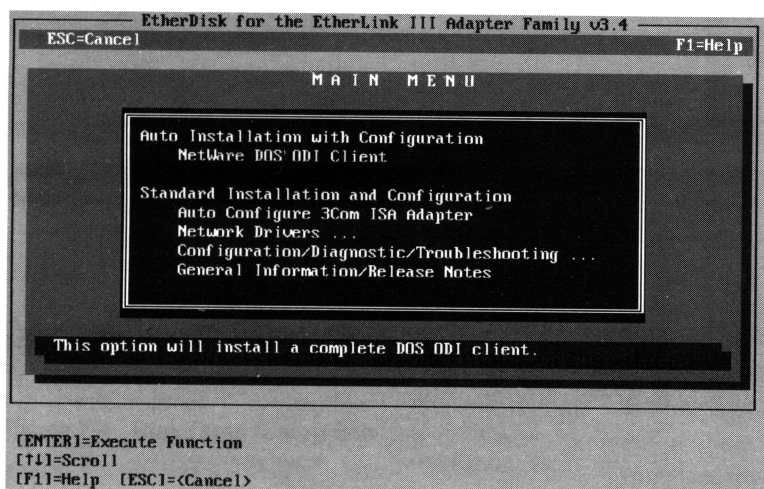


Figure 7-2. Main Menu

7. When the Configuration and Diagnostic screen appears, select Configuration and Diagnostic Program.

If you are testing multiple adapters, a screen displaying multiple adapters appears. Highlight the adapter you want to test and press [Enter]. A screen similar to the one shown in Figure 7-3 appears, showing your selection.



NOTE: *You can also run the diagnostic tests from the command line. For information on using the command line, refer to Appendix A.*

8. Under the Test pull-down menu, select Run Tests. Press [Enter].

The Run Tests dialog box appears, as shown in Figure 7-4.

9. Press [Enter] to start the tests.

Each test is set up to run ten times unless you specify otherwise. The test results are displayed on the screen with Passed or Failed in the Results column.

If you want to run the tests continuously, go to the Repetitions box on the Test Setup screen shown in Figure 7-5, and select Continuous (and deselect Halt on Error in the Errors box). The tests will continue to run until you abort them. Refer to the section “Changing the Test Setup” for more information.

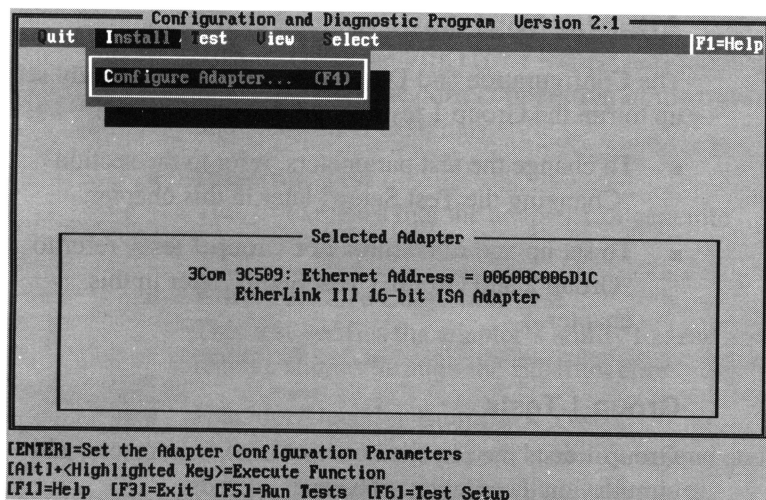


Figure 7-3. Main Window with First Adapter Selected

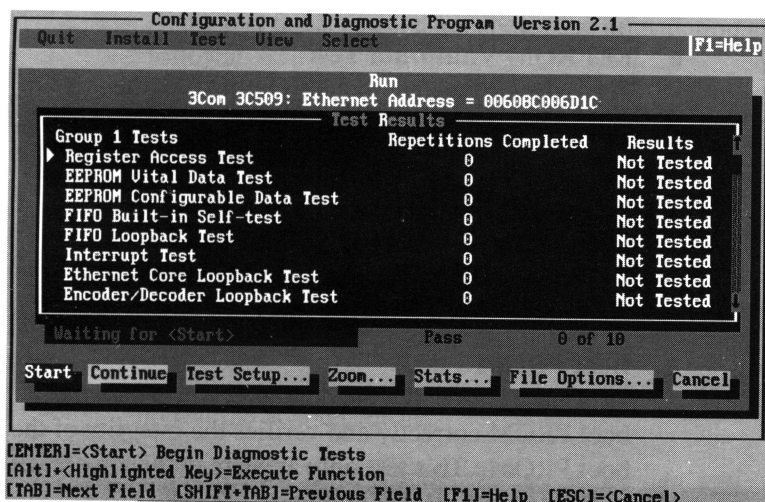


Figure 7-4. Run Tests Dialog Box

Adapter Test Setup

The Configuration and Diagnostic Program is already set up to run the Group 1 tests.

- To change the test parameters, refer to the section “Changing the Test Setup” later in this chapter.
- To set up and run Group 2 or Group 3 tests, refer to “Group 2 and Group 3 Test Setup” later in this chapter.

Group 1 Tests

Group 1 tests the physical components, connectors, and circuitry on the adapter. The tests include:

- **Register Access Test**
This test verifies that the computer can access the adapter's registers correctly.
- **EEPROM Vital Data Test**
This test verifies that the ASIC can access the EEPROM and verifies the integrity of the nonconfigurable data in the EEPROM.
- **EEPROM Configurable Data Test**
This test verifies that the ASIC can access the EEPROM and verifies the integrity of the user-configurable data in the EEPROM.
- **Boot PROM Test**
This test verifies that the computer can access the boot PROM correctly and verifies the integrity of the boot PROM. This test only appears in this on-screen list if the boot PROM is installed.
- **FIFO Built-in Self-test**
This test verifies the data integrity of the FIFO (first in/first out) signals.

- **FIFO Loopback Test**

This test uses the FIFO (first in/first out) loopback mode to verify the correct operation of the transmit and receive FIFO signals.

- **Interrupt Test**

This test verifies that the adapter can generate interrupts to the computer.

- **Ethernet Core Loopback Test**

This test verifies the adapter's ability to send and receive frames through the Ethernet core.

- **Encoder/Decoder Loopback Test**

This test verifies the adapter's ability to send and receive frames through the encoder/decoder.

Getting Help If a Test Fails

If any test fails, you can get additional information as follows:

- Highlight the test that failed in the Run Tests dialog box and press [Enter], or
- Highlight the <Zoom> command button and press [Enter].

If the diagnostic tests fail, the adapter may not be defective. The problem may be incorrect option settings, option settings that conflict with the settings of other boards, or improper installation. Follow the steps below to test the adapter further.



CAUTION: *Make sure to turn the power off before inserting or removing the adapter from the computer.*

- 1. Make sure the board is seated correctly in the slot.**

Remember that the EISA slot is deeper and requires firmer pressure to seat the adapter correctly. Check the adapter installation by reviewing the installation instructions in Chapter 1.



NOTE: *The maximum bus speed supported by the EtherLink III adapters is 10 MHz.*

- 2. Inspect all cables and connections.**

If you are using thin Ethernet cable, make sure that you have a T connector attached to the adapter and all other adapters on the network. Make sure that the thin Ethernet segment is terminated at both ends with a 50-ohm terminator.

- 3. Make sure that you booted your computer under DOS version 3.1 or later and that no device drivers or memory managers are loaded.**

- 4. If you are running the Group 2 test (only on the 3C509 coax, 3C579 coax, or 3C509-COMBO coax adapter), make sure that the loopback plug is securely attached to the adapter's BNC connector or that the adapter is attached to a properly cabled and inactive network.**

If this test fails, try another loopback plug.

- 5. If you are running the Group 3 test, make sure that the adapter is connected to a properly cabled and inactive network and that an echo server is set up on the network.**

6. **Make sure that the settings for the adapter's options are not the same settings used in the system or on any other adapter boards installed in the computer.**

7. **Install the adapter in another slot and run the diagnostic tests again.**

The slot may be defective.

8. **Replace the failed adapter with a working 3C509, 3C579, 3C509-TP, 3C579-TP, or 3C509-COMBO adapter and run the diagnostic tests again.**

Use the same option settings as those used on the failed adapter.

If the working adapter passes all tests, the original adapter is probably defective. Refer to Appendix D, "Technical Support."

9. **Make sure that if you have an ISA computer, any ISA boards have been configured to work in an ISA computer.**

Refer to the section "Reconfiguring the ISA Adapter for an ISA Computer" in Chapter 4.

10. **Install the adapter in another functioning computer and run the tests again.**

Your computer may be defective. If the adapter passes the tests in the second computer, contact the reseller or manufacturer of the computer.

Changing the Test Setup

To change the test parameters, follow these steps:

1. Choose Test Setup from the Test menu in the main window or use the <Test Setup> command button in the Run Tests dialog box.

The Test Setup dialog box appears, as shown in Figure 7-5.

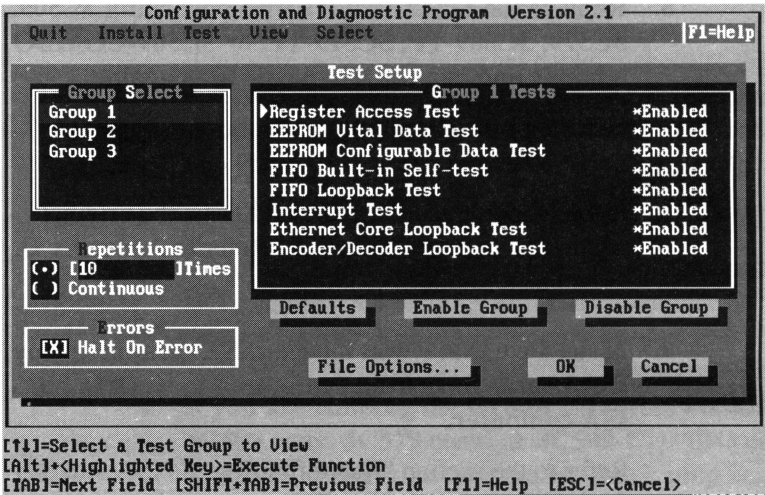


Figure 7-5. Test Setup Dialog Box

2. Press [Tab] to highlight any of the fields within the Test Setup dialog box.

3. To change a setting in any field, follow these steps:

- a. In the Group Select box, use the arrow keys to select a test group.



NOTE: For instructions on running Group 2 or Group 3 tests, refer to the next section, “Group 2 and Group 3 Test Setup.”

- b. In the Group X Tests box, use the arrow keys to highlight a test. Press the [Space Bar] to enable or disable an individual test.
- c. In the Repetitions box, specify the number of times you want to run the Group 1 tests, or use the arrow keys to select the Continuous option.
- d. In the Errors box, press the [Space Bar] to select or deselect the Halt on Error parameter.

4. When you are satisfied with the new test setup, highlight the <OK> command button and press [Enter].

5. To run the tests, choose Run Tests from the Test menu and select the <Start> command button.

For a description of these tests, refer to the section “Adapter Test Setup” earlier in this chapter.

Group 2 and Group 3 Test Setup

To run the Group 2 and Group 3 diagnostic tests, you need:

- The *EtherDisk* diskette.
- Loopback plug for the Group 2 test. If you are testing the 3C509, 3C509-COMBO, or 3C579 adapter, you can use a coax loopback plug or connect to an inactive network. The plug can be ordered from 3Com. There are no loopback tests for TP adapters.
- A second computer set up as an echo server for the Group 3 test.



CAUTION: Do not use an active network to run the Group 2 or Group 3 tests.

Group 2 Test

The Group 2 test is called the Network Loopback Test. It tests the adapter's ability to transmit and receive data over the network. This test requires installation of a loopback plug at the adapter's transceiver connection. Or, you can run the test on an inactive network.

Connecting a Loopback Plug

Follow these steps:

1. **Connect the loopback plug to the round BNC connector on the back of the 3C509, 3C509-COMBO, or 3C579 adapter.**
2. **Enable the Group 2 test from the Test Setup dialog box. Highlight <OK> and press [Enter].**
3. **Go to the Run dialog box to start the tests.**

4. After the test is completed:

- a. Exit the Configuration and Diagnostic Program.
- b. Remove the loopback plug.
- c. Connect to the network. Refer to Chapter 5, "Connecting to the Network," for instructions.

If you do not have a loopback plug, you can order one from your authorized network supplier (3Com part number 3C537) or you can make your own. To assemble the loopback plug, connect two 50-ohm network cable terminators to a T connector, as shown in Figure 7-6. You can purchase the terminators from your network supplier (3Com part number 3C535).

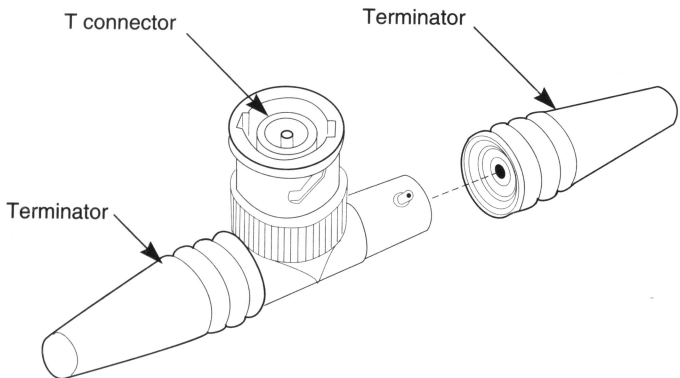


Figure 7-6. Assembling a Loopback Plug

Group 3 Test

The Group 3 test is called the Echo Exchange Test. It tests the adapter's ability to transmit and receive data while on the network.

To run the Group 3 test on the network, you need a second computer set up as an echo server. The echo server receives packets from the adapter being tested and echoes them back to the adapter.

The second computer must contain a 3Com adapter. The diagnostic program that comes with the adapter supports the EtherLink III echo server diagnostic program.

Setting Up an Echo Server

If your echo server contains an EtherLink III adapter, select the Echo Server menu item under the Test menu, and select <Start> to make the computer an echo server.

If you are setting up an echo server using a 3Com adapter other than an EtherLink III adapter, follow these steps.

1. **Select a computer to use as an echo server.**
2. **Insert the *EtherDisk* diskette in a floppy drive.**

3. Start the diagnostic program on the echo server.

The diagnostic program that you use depends upon the adapter board that is installed in the echo server. After the system prompt of the drive containing the Configuration and Diagnostic Program, enter the name of the appropriate program from the following list:

Diagnostic Program Name	Adapter
3C503	EtherLink II® or II TP, EtherLink II/16 or II/16 TP
3C505	EtherLink Plus®
3C507	EtherLink 16 or EtherLink 16 TP
3C5X9CFG	All EtherLink III adapters
3C523	EtherLink/MC
3C523TP	EtherLink/MC TP
3C527	EtherLink/MC 32

The diagnostic programs listed above come on the *EtherDisk* diskette that accompanied the adapter.

4. From the main menu, select Echo Server Setup.

The program notifies you that your computer is now set up as an echo server.

Running the Group 3 Test

To run the Group 3 test on an EtherLink III adapter:

1. **Start the EtherLink III Configuration and Diagnostic Program.**

2. **Select Test Setup from the Test menu.**

This program must be on the computer containing the adapter you want to test.

3. **Enable the Group 3 test. Highlight <OK> and press [Enter].**

4. **Go to the Run dialog box to start the tests.**

5. **After the test is completed:**

- a. End the program on the echo server.
- b. Exit the Configuration and Diagnostic Program.
- c. Connect to the network. Refer to Chapter 5, "Connecting to the Network," for instructions.

Miscellaneous Checks

Check for specific hardware problems, such as broken traces or loose/broken solder connections.

Link Beat LED

The 3C509-TP or 3C579-TP adapter has an LED for the link beat (see Figure 7-7).



NOTE: The 3C509-COMBO adapter has no LED.

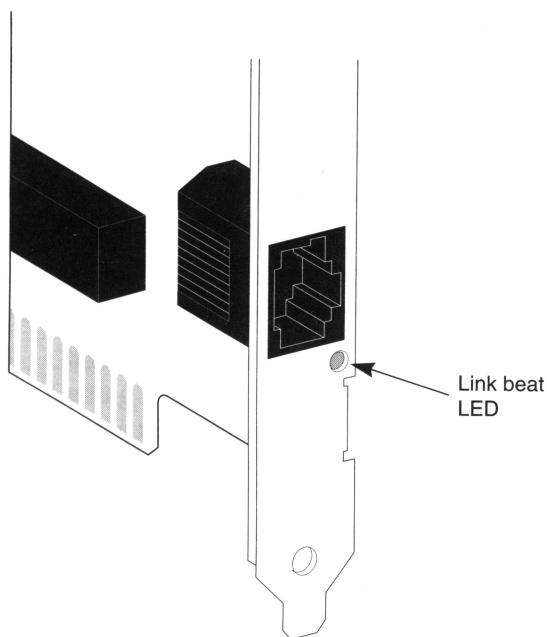


Figure 7-7. Link Beat LED

The link beat LED confirms that there is an active connection between the 3C509-TP or 3C579-TP adapter and the hub.



NOTE: When you first install the adapter and power up the computer, the LED lights, but the link beat is inactive. For the link beat to be active (enabled), you need to have run the Group 3 test or have loaded the network drivers.

If you are experiencing any problems, first make sure that your hub complies with the 10BASE-T specifications. Then check the LED.

- If the LED is on, the link beat is working.
- If the LED is off, the link beat has not been established or there is a problem with the connection between the adapter and the hub.
- If the LED is blinking, the cable polarity is reversed.

Software Checks

If you have installed the adapter correctly and you still experience problems, check the software.

Make sure that you have installed the correct drivers for the network operating system you are running (refer to Chapter 6, “Installing the Network Drivers”).

If any problem persists, refer to Appendix D, “Technical Support.”

Technical Support Sources

For any problems not discussed in this chapter, refer to Appendix D, “Technical Support,” for information on 3Com’s on-line technical services. 3ComFactsSM provides technical tips and product information. CardBoardSM and Ask3ComSM provide software updates, drivers, technical tips, and product information.

Appendix A

Using the Configuration and Diagnostic Program

This appendix explains how to use the Configuration and Diagnostic Program. It contains the following sections:

- Using the Menus
- Choosing a Menu Item
- Getting Help
- Exiting the Program
- Using the Command Line

Figure A-1 shows the Configuration and Diagnostic Program menu hierarchy.

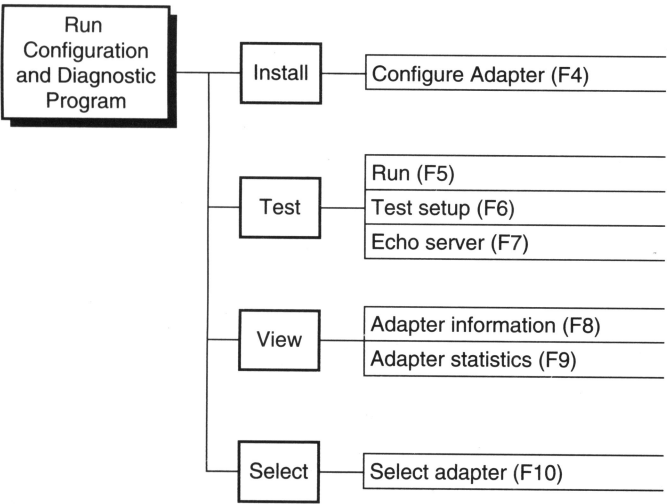


Figure A-1. The Menu Hierarchy

Using the Menus

You can access the menus and command buttons by using the keyboard (function keys or speed keys) or a mouse.

Using the Keyboard

Table A-1 describes the keys to use with the Configuration and Diagnostic Program.

Table A-1. Definition of Keys

Key	Definition
Arrow Keys	Scrolls through a list of menu items or a list box.
[Del]	Deletes the character at the cursor in a text edit box.
[End]	Moves the cursor to the last item in a list box.
[Enter]	Starts an action or accepts a selection or user-supplied data.
[Esc]	Cancels the current work and exits the dialog box.
[F1]	Displays a help screen for any item in a menu or dialog box.
[F3]	Exits the Configuration and Diagnostic Program.
[F4]	Accesses the Configure Adapter dialog box.
[F5]	Accesses the Run dialog box.
[F6]	Accesses the Test Setup dialog box.
[F7]	Accesses the Echo Server dialog box.

(continued)

Table A-1. Definition of Keys (continued)

Key	Definition
[F8]	Accesses the Adapter Information dialog box.
[F9]	Accesses the Adapter Statistics dialog box.
[F10]	Accesses the Select Adapter dialog box.
[Home]	Moves the cursor to the first item in a list box.
[PgDn]	Moves the cursor down one screen.
[PgUp]	Moves the cursor up one screen.
[Shift]+[Tab]	Moves the cursor backward through the fields in the dialog box.
[Space Bar]	Inserts or removes a check from a checkbox. Also enables/disables individual tests in the Test Setup dialog box.
[Tab]	Moves the cursor forward through the fields in a dialog box.

Using the Speed Keys

To use the speed keys, press [Alt] and the highlighted letter in any menu item or command button to activate that function.

Using the Mouse

If you have a mouse, you can use it to click on any of the menu items, command buttons, or listed items in a dialog box. Make sure that a mouse driver is loaded.

Choosing a Menu Item

Table A-2 lists the menu items in the Configuration and Diagnostic Program. Each menu item is explained in the help screens. Press [F1], tab to the <Index> command button, and press [Enter] to see the list of help screens included in the program.

Table A-2. Definition of Menu Items

Menu	Menu Item	Description
Quit	Exit	Exits the program.
	Command Line Help	Explains how to use the program from the command line.
	Driver Installation Help	Explains where to access the network drivers for the EtherLink III adapters.
	About	Lists the program's version.
Install	Configure Adapter	Manually configures the currently selected adapter.
Test	Run Tests	Runs the diagnostic tests with the chosen test configuration and view the results.
	Test Setup	Determines which tests will be run by the program.
	Echo Server	Sets up a computer as an echo server.
View	Adapter Information	Displays specific adapter information.
	Adapter Statistics	Displays the network statistics maintained by the adapter.
Select	Select Adapter	Selects an adapter and displays the configuration and adapter-specific information for the selected adapter.

Using the File Options

The File Options are located in three separate dialog boxes under the menu items Configure Adapter, Run Tests, and Test Setup. The options are:

- Load: Loads a previously saved file that contains either a specific configuration setup or a test setup to be run on the installed adapter.
- Save: Saves the currently displayed information to a file.
- Print: Prints the information currently displayed on the screen.

Getting Help

If you need additional information about any item in the diagnostic program, press [F1] to display the help screen. Use the [PgDn] and [PgUp] keys or the arrow keys to scroll through the help screens.

Tab to the <Index> command button and press [Enter] to see the list of help screens included in the program.

The on-line help also describes the different parts of the dialog boxes. The Test Setup dialog box is shown in Figure A-2.

To print the help file, first exit the program. At the DOS prompt, enter the DOS print command. For example, at the A: prompt, type the following and press [Enter]:

```
TYPE 3C5X9ENG.HLP> PRN
```

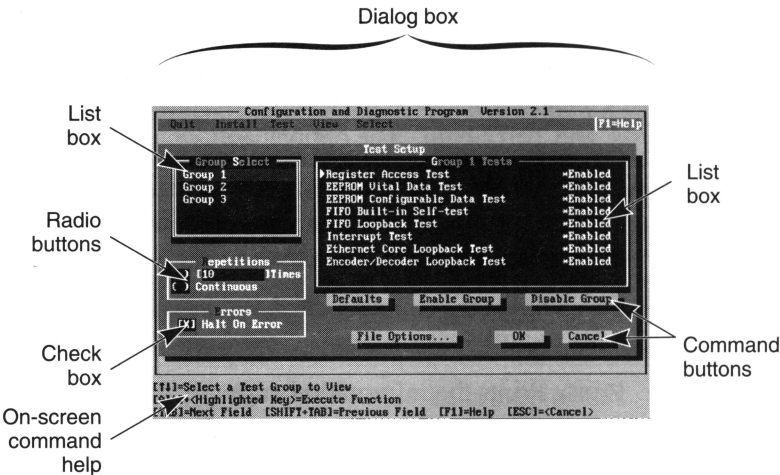


Figure A-2. Sample Dialog Box

Exiting the Program

To exit a dialog box, press [Esc]. To exit the program, choose Exit from the Quit menu or press [F3].

Using the Command Line

There are two ways to configure and test EtherLink III adapters:

- Automatically, from the menu program, by selecting the options in the Configuration and Diagnostic submenu.

Typing 3C5X9CFG without a keyword or parameter invokes the program in full windows mode, including both mouse support and context-sensitive help. Press [F1] for on-line help at any time.

- Manually, from the root directory of the *EtherDisk* diskette, by typing:

```
3C5X9CFG [command keyword] [parameter list]
```

where 3C5X9CFG represents the Configuration and Diagnostic Program name. Command keywords and parameters shown in brackets are optional.

Table A-3 is a brief list of the command keywords and their definitions. If you type a command keyword, each command has parameters that you need to specify.

To configure and test the EtherLink III adapters from the command line, follow these steps:

1. **Exit the Configuration and Diagnostic Program.**
2. **At the system prompt for the drive containing the Configuration and Diagnostic Program, type:**

```
3C5X9CFG [command keyword] [parameter list]
```

You can get help information for specific commands such as RUN by typing HELP, then the command. For example, at the system prompt for the drive containing the Configuration and Diagnostic Program, type the following and press [Enter]:

```
3C5X9CFG HELP RUN
```



NOTE: *If this computer is an operating server, notify all users of the server to save their work and log out from the network. The Configuration and Diagnostic Program disrupts the normal operation of servers and workstations, so work that is not saved may be lost.*

To avoid interference from other running programs, power down the server, and reboot with a DOS-only diskette.

Command Line Keywords

You can use the first two characters of any command or parameter as a shortcut. For example, 3C5X9CFG HE RU means 3C5X9CFG HELP RUN. The command keywords and parameters are not case-sensitive. A more detailed description of these parameters is contained in the on-line help file.

Table A-3. Command Line Keywords

Command Keyword	Definition
CONFIGURE	Configures an adapter in one of three ways: (1) automatically, using the /AUTO parameter, (2) specifying an adapter configuration file, or (3) using command line parameters.
ECHOSERVER	Enables a designated adapter to function within the echo server.
HELP	Displays general or command-specific help information. To get command-specific help, enter: 3C5X9CFG HELP [command keyword]
LANGUAGE	Provides support for multiple languages in full windows mode via a different resource file for each language supported.
LIST	Displays a list of installed adapters recognized by this program and their assigned adapter numbers.
RUN	Executes the diagnostic tests, which can also be specified from a file, on a selected adapter and writes the results to the screen, a file, or a printer.

Appendix B

Specifications

This appendix lists the specifications for the EtherLink III adapters explained in this manual. It also contains pin assignments for the adapters' RJ-45 connectors and Attachment Unit Interface (AUI) connectors.

Adapter Card Specifications

Network Interface

3C509 adapter:	Ethernet IEEE 802.3 industry standard for a 10 Mbps baseband CSMA/CD local area network.
3C579 adapter:	Ethernet IEEE 802.3 industry standard for a 10 Mbps baseband CSMA/CD local area network.
3C509-TP adapter:	IEEE 802.3i 10BASE-T industry standard for a 10 Mbps CSMA/CD local area network.
3C579-TP adapter:	IEEE 802.3i 10BASE-T industry standard for a 10 Mbps CSMA/CD local area network.
3C579-COMBO adapter:	IEEE 802.3i 10BASE-T and Ethernet IEEE 802.3 industry standard for a 10 Mbps CSMA/CD local area network.

Physical Dimensions

ISA Length:	6.299 inches
ISA Height:	3.475 inches
ISA COMBO Height:	4.2 inches
EISA Length:	7.1 inches
EISA Height:	4.2 inches

Environmental Operating Range

Operating temperature:	0° to 70° C (32° to 158° F)
Humidity:	10 to 90% noncondensing

Power Requirements

Operating voltage:	ISA and COMBO:
	+5 V \pm 5% @ 200 mA max
	+12 V \pm 5% @ 0.5 A max
	EISA:
	+5 V \pm 5% @ 200 mA max
	+12 V \pm 5% @ 0.5 A max

Mean Time Between Failures (hours calculated)

3C509 adapter	MTBF = 222,000
3C579 adapter	MTBF = 222,000
3C509-TP adapter	MTBF = 257,000
3C579-TP adapter	MTBF = 257,000
3C509-COMBO adapter	MTBF = 205,000

Cable Requirements

To remain compliant with the limits of a Class B digital device, 3Com requires that you use quality interface cables when connecting to these devices. Changes or modifications not expressly approved by 3Com could void the user's authority to operate this equipment. Suggested cable types are:

- Thin Ethernet (50 ohm) for BNC connections:
3C530-xxx or equivalent
- Thick Ethernet (50 ohm) for AUI connections:
3C120-xxx
- Unshielded twisted-pair (100-ohm nominal):
 - Level 3 LAN and high speed data cable. For example, Anixter® CM-00424BAG-3 or equivalent.
 - Level 4 extended distance LAN cable. For example, Anixter CM-00424BAG-4 or equivalent.

RJ-45 Connector Pin Assignments

Figure B-1 shows the RJ-45 connector pin assignments.

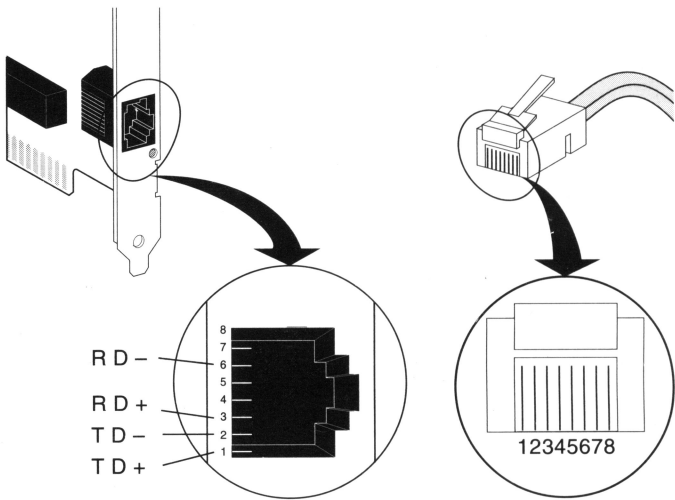


Figure B-1. RJ-45 Connector Pin Assignments

AUI Connector Pin Assignments

Table B-1 lists the pin assignments for the AUI (attachment unit interface) connector.

Table B-1. AUI Connector Pin Assignments

Pin	Function	Pin	Function
1	Collision shield	5	Receive +
2	Collision +	6	Power return
3	Transmit +	7	Not used
4	Receive shield	8	Not used

Appendix C

Error Messages

This appendix lists in alphabetical order the *EtherDisk* diskette on-line error messages. The text of each error message suggests possible causes of the error condition and gives the appropriate remedy in most cases. If error conditions persist, refer to Chapter 7, "Performing Troubleshooting and Diagnostic Tests."

A diagnostic test name was found in the configuration file at line *x*. Only configuration parameter variables are allowed.

A network driver is installed. Start the computer with a standard DOS diskette with no network drivers or TSRs, and run the Configuration and Diagnostic Program again.

A syntax error was found in the configuration file at line *x*.

Adapter failed during Echo Exchange test. Try the test again. If the failure persists, swap with a known good EtherLink III, and try again.

Adapter failed while transmitting the request to locate the echo server. This problem can be caused by either a cabling problem or an adapter failure.

Adapter failed while trying to read the adapter configuration stored on the adapter. Save a new configuration on the adapter. If the problem persists, swap with a known good EtherLink III, and try again.

An adapter was configured for EISA mode, but the EISA configuration utility has not run yet.

An EISA-configured adapter is installed in an ISA computer. Use the Configure option to reconfigure I/O Base Address setting to an ISA setting.

Attempting to configure the I/O Base Address for EISA mode. This is not allowed in an ISA computer.

Automatic configuration only available for ISA bus adapters.

Configuration and Diagnostic Program supports up to six ISA adapters installed in the computer. More than six were detected.

Either there is no boot PROM installed on the adapter or the selected boot PROM base address is being used by another device or software program installed by the computer. Do you want to save the configuration anyway?

Invalid EISA system configuration. Exit the Configuration and Diagnostic Program, and run your EISA configuration utility again.

The adapter has been changed from EISA mode to ISA mode. To run Auto Configure in this new mode, you must first exit, and then rerun your EISA configuration utility.

The adapter has been changed from ISA to EISA mode, or from EISA mode to ISA mode. Exit this program, place the EISA configuration diskette in drive A, and reboot the computer.

The adapter is being configured for EISA mode at line *x* in the configuration file. This is not allowed on an ISA computer.

The adapter is in EISA mode. Exit the Configuration and Diagnostic Program and run the EISA configuration utility.

The adapter is in EISA mode. This option can only be set using your EISA configuration utility.

The adapter was changed from EISA to ISA mode. Exit this program, place your EISA configuration diskette in drive A, and reboot the computer.

The adapter was changed from ISA to EISA mode. Exit this program, place your EISA configuration diskette in drive A, and reboot the computer.

The adapter's I/O base address, interrupt request level, and transceiver type have been successfully selected with Auto Configure. For your new settings to take effect, save the settings, exit, and reboot the computer.

The ConfigPort value xxxxx on the command line is not supported. Valid settings are 100–1E0, in increments of 10. Please try again.

The selected EtherLink III can only be configured while in test mode. The diagnostic tests cannot be run from this mode.

The selected interrupt request level is being used by another device installed in the computer. Do you want to save the configuration anyway?

The selected I/O base address is being used by another device installed in the computer. Do you want to save the configuration anyway?

The value xxxxx at line x in the configuration file is not supported. Check the EtherLink III Adapter Guide for supported option settings.

The value xxxxx on the command line is not supported. Check the EtherLink III Adapter Guide for supported option settings.

There is only one transceiver on the board. This selection cannot be changed.

Unable to configure boot PROM base address at line x in the configuration file. The boot PROM is disabled.

Unable to configure boot PROM base address. The boot PROM is disabled.

Unable to configure Link Beat at line *x* in the configuration file. The on-board TP transceiver must be selected to configure this option.

Unable to configure Link Beat. The on-board TP transceiver must be selected to configure this option.

Unable to configure value *xxxxx*. Use your EISA configuration utility change this option.

Unable to locate an unused interrupt request level. Try starting the computer from a standard DOS diskette with no drivers or TSRs, and run the Configuration and Diagnostic Program again.

Unable to locate an unused I/O base address. Try the following:

- 1. Boot the computer from a standard DOS diskette with no drivers or TSRs.**
- 2. Re-seat the EtherLink III into the slot.**
- 3. Don't use PC Turbo for Fast mode.**

Unable to locate the echo server. The request to locate has timed out. Make sure you have set up a second 3Com node as an echo server, and it is set up properly.

Unable to recognize value *xxxxx* on the command line. Please change to a valid setting.

Unable to recognize variable value *xxxxx* at line *x* in the configuration file. Please change to a supported variable.

Unable to recognize variable value *xxxxx* at line *x* in the configuration file. Please change to a valid setting.

Unable to recognize variable value *xxxxx* at line *x* in the configuration file. Use your EISA configuration utility to change this option.

Use a later version of the Configuration and Diagnostic Program to take advantage of all the features on this adapter. Please obtain the latest version from your 3Com supplier.

You are about to exit, but your new adapter configuration has not been saved. Do you want to exit without saving?

You must use a later version of the Configuration and Diagnostic Program with this adapter. Please obtain the latest version from your 3Com supplier.

Appendix D

Technical Support

This appendix explains how to obtain worldwide support for 3Com adapters and software.

On-line Product Support

3Com offers worldwide product support 24 hours a day, seven days a week, through automated on-line systems.

CardBoardSM Bulletin Board Service

CardBoard is 3Com's menu-driven bulletin board service. It contains the most current adapter information in downloadable files. CardBoard provides:

- Software drivers
- Technical tips
- Product information
- Diagnostic programs
- Software patches and fixes

These files are easy to access through a modem connection set at 8 data bits, no parity, 1 stop bit. Call the CardBoard telephone number nearest you:

Australia	(61) (2) 955 2073 – up to 2400 baud
France	(33) (1) 69 86 69 54 – up to 9600 baud
Germany	(49) 89 62732-188/189 – up to 9600 baud
Italy	(39) (2) 27 30 06 80 – up to 9600 baud
Japan	(81) (3) 3243 9245 – up to 9600 baud
Singapore	(65) 543 5693 – up to 9600 baud

Taiwan	(886) (2) 5776160 – up to 14400 baud
U.K.	(44) (44) 2 278278 – up to 14400 baud
U.S.	(1) (408) 980-8204 – up to 14400 baud

For information on international CardBoard access numbers added since this manual was published, contact your local 3Com office. Refer to the list of international sales offices later in this appendix.

3ComFactsSM Automated Fax Service

3Com's interactive fax service, 3ComFacts, provides data sheets, technical articles, diagrams, and troubleshooting instructions on 3Com products 24 hours a day, seven days a week. Within this service you may choose to access CardFactsSM for adapter information or NetFactsSM for network system product information.

- **CardFacts** provides adapter installation diagrams, configuration drawings, troubleshooting instructions, and technical articles. Document 9999 provides you with an index of adapter documents.
- **NetFacts** provides data sheets and technical articles on 3Com's hub, bridge, router, terminal server, and software products. Document 8888 provides you with an index of system product documents.

Call 3ComFacts using your touch-tone telephone.
International calling numbers are:

U.K.	(44) (44) 227 8279
U.S.	(1) (408) 727 7021

Local access to 3Com's fax system is available within the following countries using the numbers listed below:

Denmark	800 17319
Finland	98 001 4444
France	05 90 81 58
Germany	0130 81 80 63
Italy	1678 99085
Netherlands	06 0228049
Norway	05 01 1062
Sweden	020 792954
U.K.	0800 626403

Ask3ComSM On-line Service

Ask3Com is an on-line service, located on CompuServeSM. This service is accessible worldwide. Ask3Com contains extensive technical and marketing information on all 3Com products. To use Ask3Com, you must first obtain a CompuServe account. To open an account, contact your local CompuServe office.

To use Ask3Com, log into CompuServe, type:

GO THREECOM

and press [Enter] to see the Ask3Com main menu.

3Com Documentation on CD-ROM

An extensive library of 3Com product documentation is available in CD-ROM format through Support on Site™ for Networks subscription service. This multivendor CD-ROM service, offered by Computer Library™, a division of Ziff Communications Company, contains technical information and documentation from major data networking hardware and software manufacturers. Stand-alone and concurrent user network subscriptions are available. To order, call Computer Library at (800) 827-7889, extension 515. Outside the U.S. call (212) 503-4400 or use fax number (212) 503-4487.

Support from Your Network Supplier

If additional assistance is required, contact your network supplier. Many suppliers are authorized 3Com service partners who are qualified to provide a variety of services, including network planning, installation, hardware maintenance, application training, and support services.

U.S. and Canada

Call the following number to locate your local 3Com sales office:

U.S. (1) (800) NET-3Com

The 3Com sales office will refer you to the nearest 3Com authorized service partner.

Outside the U.S. and Canada

To locate a 3Com authorized service partner near you, contact your local 3Com sales office.

Australia	(61) 2 959 3020
Belgium/Netherlands	(31) 3402 55033
Brazil	55 11 530 2318
France	(33) 1 698 66800
Germany	(49) 89 627320
Hong Kong	(852) 868 9111
Italy	(39) 22 7302041
Japan	(81) 3 3243-9234
Mexico	525 531 0591
Middle East	971 4 317173
Nordic	(46) 8 703 4870
Singapore	(65) 538 9368
Taiwan	(886) 2 577 4352
U.K.	(44) 628 890 670

When you contact a 3Com authorized service partner for assistance, have the following information ready:

- Diagnostic error messages
- A list of system hardware and software, including revision levels
- Detail on recent configuration changes, if applicable

3Com's service partner will determine what action needs to be taken to resolve the problem. 3Com service partners can verify hardware failures and advise you when it is more cost-effective to replace, rather than repair, a product.

Returning Products for Repair

A product sent directly to 3Com for repair must first be assigned a Return Materials Authorization number (RMA). A product sent to 3Com without an RMA number will be returned to the sender unopened, at the sender's expense.

When you call for an RMA number, be prepared to provide the product name, serial number, and diagnostic error messages. Payment, shipping instructions, and turnaround time will be confirmed when the RMA number is assigned.

To obtain an RMA number, call or fax:

Europe	<i>Phone</i>	(44) (44) 2 278000
	<i>Fax</i>	(44) (44) 2 236824

U.S.	<i>Phone</i>	(800) 876-3266, press option 2
	<i>Fax</i>	(408) 764-7290

Outside Europe and the U.S.

<i>Phone</i>	(408) 492-1790
<i>Fax</i>	(408) 764-7290



NOTE: RMA forms (except Europe) are available on CardFacts. Dial (408) 727-7021, request document 9014.

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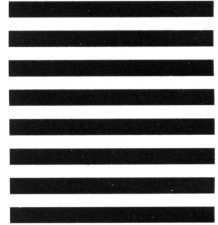


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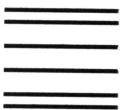
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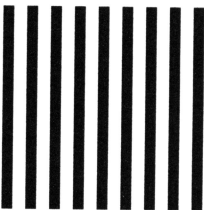


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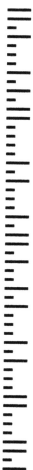
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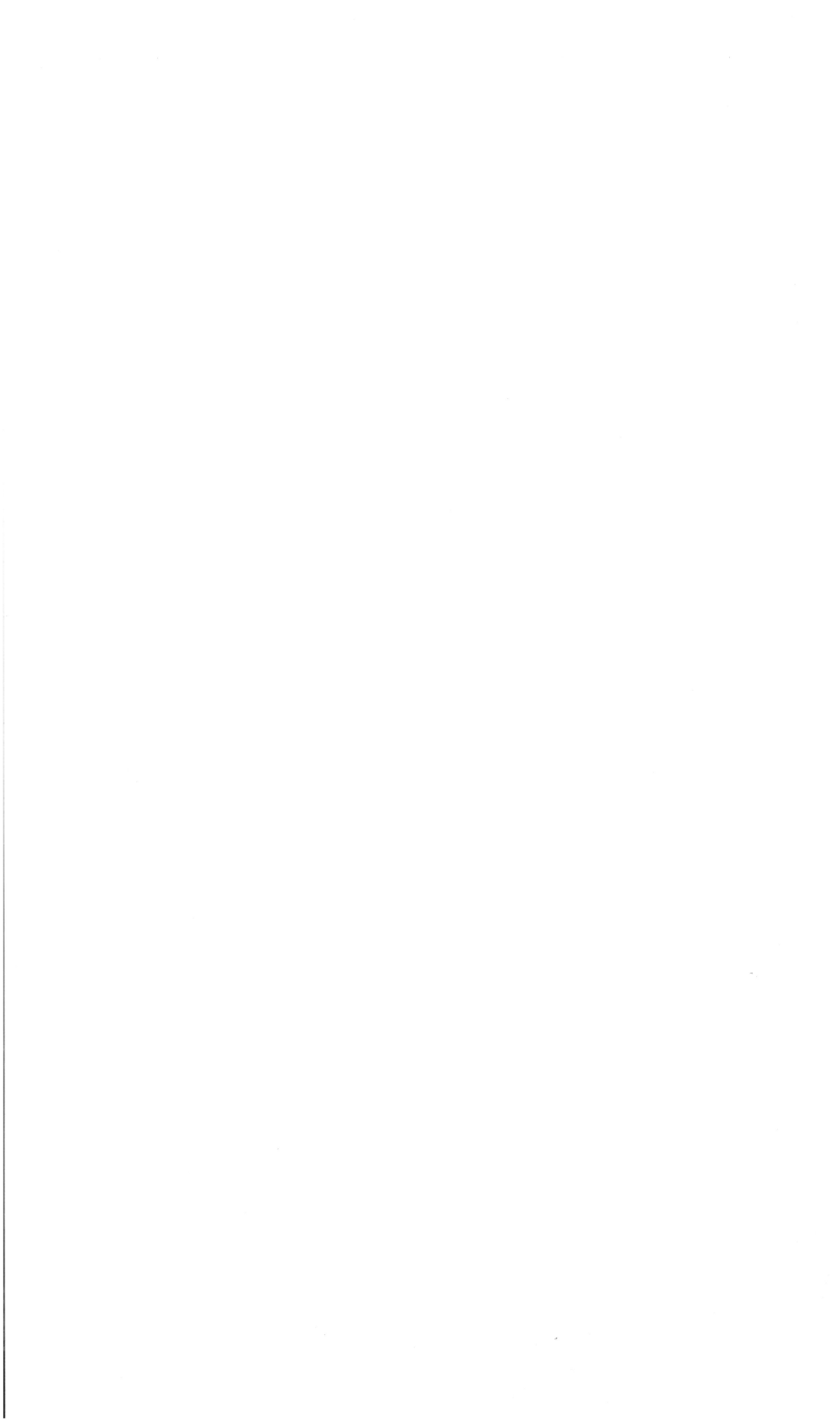


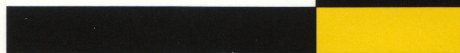
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